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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF MAILING

I hereby certify that this New Application Transmittal and the documents referred to as enclosed therein are being deposition with the United States Postal Service on this 20th day of September, 2000, as Express Mail #ELL602909841US, in an envelope addressed to: BOX PATENT APPLICATION, Assistant Commissioner for Patents, Washington, D.C. 20231.

Caroline G. Chicoine
Reg. No. 38,198

In re application of :
Efficient Market Services, Inc. :
:
Serial No.: :
:
Filed: :
:
For: Electronic Offer Management System :
and Method Therefor :
:

BOX PATENT APPLICATION
Assistant Commissioner for Patents
Washington, D.C. 20231

NEW APPLICATION TRANSMITTAL

Transmitted for filing is the patent application of

Inventor(s): Penny H. Baron
Wayne H. Levy
Brian M. Rock
Timothy E. Half man
Mark S. Smith

For: Electronic Offer Management System and Method Therefore

Enclosed for filing are:

1. The Papers Required for Filing Under 37 CFR 1.53:

41 Pages of the Specification
1 Pages of the Abstract
3 Pages of the Claims
6 Pages of Drawings

___ formal X informal

2. Two (2) checks in the amount of $40.00 and $345.00, respectively. It is believed that these are correct fees for the filing of the Application and Assignment. However, if this is incorrect, the Commissioner is hereby authorized to charge Deposit Account 50-0287 for a deficiency or to credit any excess thereto.

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VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS (37 CFR 1.9(f) AND 1.27 (c)) - SMALL BUSINESS CONCERN	Docket No. 6076-0002

Serial No.	Filing Date	Patent No.	Issue Date

Applicant/ Patentee: **Efficient Market Services, Inc.**

Invention: **ELECTRONIC OFFER MANAGEMENT SYSTEM AND METHOD THEREOF**

I hereby declare that I am:

- ☐ the owner of the small business concern identified below:
- ☒ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF CONCERN: **Efficient Market Services, Inc.**

ADDRESS OF CONCERN: **106 Wilmot Road, Suite 400, Deerfield, Illinois 60015**

I hereby declare that the above-identified small business concern qualifies as a small business concern as defined in 13 CFR 121.3-18, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the above identified invention described in:

- ☒ the specification filed herewith with title as listed above.
- ☐ the application identified above.
- ☐ the patent identified above.

If the rights held by the above-identified small business concern are not exclusive, each individual, concern or organization having rights to the invention is listed on the next page and no rights to the invention are held by any person, other than the inventor, who could not qualify as an independent inventor under 37 CFR 1.9(c) or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

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Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

☒ no such person, concern or organization exists.
☐ each such person, concern or organization is listed below.

FULL NAME _____
ADDRESS _____
☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

FULL NAME _____
ADDRESS _____
☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

FULL NAME _____
ADDRESS _____
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ADDRESS _____
☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING: Penny H. Baron
TITLE OF PERSON SIGNING OTHER THAN OWNER: _____
ADDRESS OF PERSON SIGNING:

SIGNATURE: Penny H. Baron DATE: Sept 11 2000

ELECTRONIC OFFER MANAGEMENT SYSTEM AND METHOD THEREOF

BACKGROUND OF THE INVENTION

The present invention relates generally to an electronic offer management system and method thereof, and more particularly to a system that enables the electronic management of offers distributed by a plurality of different offer distributors to customers and the dynamic profiling of such customers so that improved offer targeting can be achieved.

Today, about twenty percent (20%) of all sales in grocery retail are covered by some promotion or offer. These offers are found in a variety of forms including temporary price reductions, in-store displays, manufacturer-sponsored coupon offers, advertisements, and frequent shopper (i.e., loyalty) discounts. Traditionally, such offers have been distributed to customers via "physical" media (i.e. direct mailers, printers, displays at the register, Sunday coupon inserts, magazines, etc.). Given the manual nature of such a system of distribution, however, customer-specific offers based on a variety of factors, such as demographics, past purchasing behavior, and price sensitivity are impractical. This in turn has a substantial impact on the effectiveness and cost of providing offers through such a system. For retailers having numerous competing product lines, such as supermarkets, this offer targeting capability is critical. Moreover, clearing and settlement of offers distributed in such a manner is technically infeasible with respect to time, labor and thus, cost intensive.

With the advent of the Internet as a new ecommerce tool, offers are now also being distributed "virtually" to customers. For example, companies such as Cool Savings, PlanetU and ValuPage are operating websites from which customers can obtain

coupons redeemable at various retail stores and supermarkets, as well as at stores having an online presence. Traditional retailers are also beginning to distribute offers online. For example, Schnucks supermarket provides it's weekly advertisements, as well as coupons online. Offer targeting across a plurality of different offer distributors or based on "non-customer" data, such as price, is not allowed. Moreover, the clearance and settlement of such offers are still performed largely through a manual process and in a decentralized manner. As a result, fraudulently fabricated offers cannot be accurately tracked and thus, prevented.

Finally, under current methods of offer distribution, retailers must customize their point-of-sale (POS) system according to each offer distributor's technical design structure. In addition, the entire offer transaction from creation through redemption, clearance and settlement is not centralized, thereby increasing the complexity of the interfaces needed between the parties to the entire transaction. Moreover, data relevant to the transaction and necessary for sophisticated levels of targeting cannot be obtained from a single source, thereby decreasing its accessibility, accuracy and completeness. Given that the primary purpose of providing such offers is to drive up the number of new sales, the inability to manage electronic offers in a centralized manner and to dynamically profile customers and target offers increases the overall costs and effectiveness of the offers.

Accordingly, there is a need for an electronic offer management system in which offers can be distributed by a plurality of different offer distributors for automatic routing to a store's point of sale system, and in which such offers can be automatically cleared

and settled once redeemed, such that an electronic audit of the entire offer transaction, and dynamic profiling of customers for improved offer targeting can be achieved.

SUMMARY OF THE INVENTION

An electronic offer management system for offer transactions is disclosed. The system comprises receiving means for receiving information related to a plurality of offers distributed by a plurality of different offer distributors to customers for redemption at a plurality of stores, routing means for automatically routing the information related to each offer to a point-of-sale system of each store in which the offer can be redeemed, and clearing means for automatically clearing the offers redeemed by the customers at the stores. The plurality of offer distributors comprises at least one of an internet offer distributor, a retailer offer distributor, a kiosk offer distributor, a direct mail offer distributor, and an email offer distributor.

The clearing means comprises means for receiving redemption information from the stores, and means for comparing the redemption information to the offer information whereby each offer redeemed by the customers can be validated. The system further comprises settlement means for automatically reconciling financial obligations associated with each offer cleared by the clearing means, whereby a single, electronic audit of each offer transaction can be achieved.

The system further comprises activation means for selectively activating and deactivating each offer. The system also further comprises profiling means for dynamically profiling the customers so that the offers can be targeted to specific customers, and offer consolidation means for consolidating the offers available through the system for presentation to the customer at a plurality of levels. The profiling means

preferably comprises at least one of a static profile, a persistent profile and a dynamic profile. The plurality of levels comprises at least one of an offer distributor level and a store level. Each offer corresponds to a reward, and the system further comprises reward deferral means for deferring issuance of the reward to a third party. The offer information comprises at least one condition, which is at least one of an item purchase condition, a department purchase condition, a total purchase condition, a time of day condition and a day of the week condition.

A method of electronic management of offer transactions is also disclosed. The method comprises receiving information related to a plurality of offers distributed by a plurality of different offer distributors to customers for redemption at a plurality of stores, automatically routing the information of each offer to a point-of-sale system of each store in which the offer can be redeemed, and automatically clearing the offers redeemed by the customers at the stores.

The method further comprises the step of automatically reconciling financial obligations associated with each cleared offer whereby a single, electronic audit of each offer transaction can be achieved. The method also further comprises the step of receiving redemption information from the stores, and comparing the redemption information to the offer information whereby each offer redeemed by the customers can be validated. The method also preferably comprises the step of selectively activating each offer, and consolidating the offers for presentation to the customer at a plurality of levels, such as offer distributor level and a store level. The method also further comprises the step of dynamically profiling the customers so that the offers can be targeted to specific customers.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates the flow of information in an electronic offer management system in accordance with the present invention.

FIG. 2 is a flowchart representing the process of dynamic profiling provided by the system of Fig. 1

FIG. 3A is a spreadsheet showing an example of a non-targeted offer.

FIG. 3B is a spreadsheet showing an example of a static profile-targeted offer generated through the system of Fig. 1.

FIG. 3C is a spreadsheet showing an example of a persistent profile-targeted offer generated through the system of Fig. 1.

FIG. 3D is a spreadsheet showing an example of a dynamic profile-targeted offer generated through the system of Fig. 1.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention is directed to an electronic offer management system and method thereof. Fig. 1 illustrates the main components of the system represented as 10, as well as the flow of information there through. In summary, offers are distributed to customers by a plurality of different offer distributors 12. The details of the offers are communicated to an electronic clearing network 13 and routed to the appropriate store 28 for redemption by customers. Transaction log files containing point-of-sale transaction details are forwarded back to network 13 where a clearing process identifies what offers have been redeemed and validates them against the offers communicated to network 13.

Settlement details are also prepared for processing by a settlement agent 30. For the purposes of discussion only, system 10 will be described with respect to offers written in extensive Markup language (XML) having a representative documentation convention for XML element and attribute tags as described below. It can be appreciated by one skilled in the art, however, that the offer may be defined using other languages or formats that allow for the functionality described herein, such as for example the Hypertext Markup language.

Element/Attribute Tag	Description
/SOX	Element aggregate tag.
/SOX/@Version	Element attribute tag identified with a @.
/SOX/Offer/OfferMaintReq/OfferProperties ../MemberOffer	Shortened form for: /SOX/Offer/OfferMaintReq/OfferProperties/MemberOffer
../RewardSet[]/ItemPurchase/ItemList/Item[]	Element list has [] appended (occurrence indicator). In the example ../RewardSet[] is an aggregate element that must appear once or many times. In this example, the ../Item[] element must appear once or many times within each instance of /RewardSet[].

Referring to Fig. 1, the process starts through the distribution of an offer to a customer by an offer distributor 12 that is available for redemption at one or more stores 28, which can be traditional brick-and-mortar stores, direct mail stores, online stores or any other type or form of store. In one embodiment, this is done in conjunction with a manufacturer (not shown) who is the sponsor of the offer and thus, bears the cost of it. Offers are distributed via a plurality of different offer distributors including but not limited to Internet offer distributors 14, in-store kiosk offer distributors 16, retailer offer distributors 18, and direct mail/email offer distributors 20. System 10 operates using five (5) XML document types, namely Offer, CustomerOffer, OfferAck, CustomerOfferAck and ErrorResponse.

The Offer document type defines the generic offer setup (i.e. offer properties, conditions, and rewards) and routing instructions. In a preferred embodiment, each Offer document is limited to information related to a single offer being distributed by a particular offer distributor 12. The maintenance actions supported by the Offer document type are to add, replace or delete an offer, and are identified in a tabular format as shown below.

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX/Offer	Aggregate	0	Once	Required Always	Offer: The /SOX/Offer aggregate element may contain: One /SOX/Offer/OfferMaintReq aggregate element and one /SOX/Offer/OfferRouteReq aggregate element; OR One /SOX/Offer/OfferMaintReq aggregate element only; OR One /SOX/Offer/OfferRouteReq aggregate element only.
../@OfferID	String	12	Once	Required Always	Offer ID: Number is provided by offer distributor and must be unique for that distributor.
../OfferMaintReq	Aggregate	0	Once	Optional	Offer Maintenance Request: Encapsulates Offer maintenance request details for @OfferID above.
../OfferMaintReq/@Action	Enumerated String	7	Once	Required	Action: Offer maintenance action requested. Valid values: Add Replace Delete

The CustomerOffer document type defines any customer-specific offer setup and routing instructions. The OfferAck document type represents the positive acknowledgement returned by the network 13 upon its successful processing of an Offer document type. Likewise, CustomerOfferAck document type represents the positive acknowledgement returned by the network 13 upon its successful processing of a CustomerOffer document type. Finally, ErrorResponse document type represents the negative acknowledgement

returned by the network 13 upon encountering an error in the course of processing an Offer or CustomerOffer document type. These document types preferably adhere to the document type definition (DTD) as identified in Appendix 1.

There are three (3) main components to each offer, namely offer properties, conditions, and rewards. Offer properties are the data elements that serve to generally describe an offer, such as a description, valid date range, and the number of times a customer may receive the reward(s) associated with that offer. Each Offer document includes a header, a representative sample of which is identified in a tabular format below.

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX	Aggregate	0	Once	Required Always	Document Root Element: Identifies this as a SOX XML document.
../@OfferDistributorID	String	6	Once	Required Always	Offer Distributor ID: Assigned by the ECN. Value = 1 - 999999
../@SenderDocUID	String	12	Once	Required Always	Sender's Document Unique ID: Sender's unique reference code for this document for audit trail purposes.
../@Version	String	3	Once	Required Always	SOX Version of File: Version of SOX to which this document conforms. Value = 1.0
../@AckRequested	Enumerated String	7	Once	Required Always	Acknowledgement Requested: Defines type of acknowledgement requested. Supported values: Normal Terse Verbose
../@SOXType	Enumerated String	5	Once	Required Always	Sox Type: Indicates type of SOX XML document. All SOX documents have this attribute with appropriate values. Value = Offer

The header includes an @Offer DistributorID parameter that represents an identifier assigned by the network 13 for each offer distributor 12 of system 10. The @SenderDocUID parameter represents a unique reference code which identifies the XML document to its sender so he or she can later refer to it. This parameter is used for

audit trail purposes. The @Version parameter represents the version of the specification to which the Offer document conforms. The @AckRequested parameter defines the type of acknowledgement requested for the Offer document (i.e., normal, terse, verbose). The @SOXType document identifies the type of XML document (in this case, "Offer").

A representative sample of the plurality of offer properties available through system 10 is identified in a tabular format as shown below.

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX/Offer/OfferMaintReq/ OfferProperties	Aggregate	0	Once	Optional	Offer Properties: Contains Offer Properties for @OfferID above. This element is required when /SOX/Offer/@Action = "Add" or "Replace". It is not required when /SOX/Offer/@Action = "Delete".
../MemberOffer	String	3	Once	Required	Member Offer: Is loyalty program membership required? Valid values: Yes No When membership is not a requirement, all customers are eligible to participate in the Offer.
../StaffAllowed	String	3	Once	Required	Staff Allowed: Can staff participate in this offer? Valid values: Yes No
../OfferType	String	6	Once	Required	Offer Type: Coupon type for monetary rewards. (For tax calculations.) Valid values: Vendor Store
../OfferXactLimit	String	2	Once	Required	Offer Transaction Limit: Maximum number of times this offer may be used per transaction. Value = 0 - 9, or -1 (= unlimited). If value = 0, this offer is not active.
../OfferCustLimit	String	2	Once	Required	Offer Customer Limit: Total number of times this offer may be used, across transactions. Value = 0 - 9, or -1 (= unlimited).
../OfferStartDateTime	Aggregate	0	Once	Required	Offer Start Date Time: Date/time when the offer becomes active. Encapsulates the elements that define the timestamp.

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
../OfferStartDateTime/Year	String	4	Once	Required	Offer Start Date Time: Year Format: CCYY
../OfferStartDateTime/Month	String	2	Once	Required	Offer Start Date Time: Month Format: MM Value = 01 - 12
../OfferStartDateTime/Day	String	2	Once	Required	Offer Start Date Time: Day Format: DD Value = 01 - 31
../OfferStartDateTime/Hour	String	2	Once	Required	Offer Start Date Time: Hour Format: HH Value = 00 - 23
../OfferStartDateTime/Minute	String	2	Once	Required	Offer Start Date Time: Minute Format: MM Value = 00 - 59
../OfferEndDateTime	Aggregate	0	Once	Required	Offer End Date Time: Date/time after which the offer expires. Encapsulates the elements that define the timestamp.
../OfferEndDateTime/Year	String	4	Once	Required	Offer End Date Time: Year Format: CCYY
../OfferEndDateTime/Month	String	2	Once	Required	Offer End Date Time: Month Format: MM Value = 01 - 12
../OfferEndDateTime/Day	String	2	Once	Required	Offer End Date Time: Day Format: DD Value = 01 - 31
../OfferEndDateTime/Hour	String	2	Once	Required	Offer End Date Time: Hour Format: HH Value = 00 - 23
../OfferEndDateTime/Minute	String	2	Once	Required	Offer End Date Time: Minute Format: MM Value = 00 - 59
../OfferDescription	String	40	Once	Required	Offer Description: Text description of the promotion - printed on checkout receipt. Format on checkout receipt: 2 lines of 20 characters each.
../OfferReportDescription	String	40	Once	Required	Offer Report Description: Text description of the offer for reporting purposes.
../OfferSponsorSettlementID	String	9	Once	Required	Offer Sponsor Settlement ID: Assigned by the ECN. Value = 1 - 999999999
../DeferredReward	String	3	Once	Required	Deferred Reward: Is reward to be received in a deferred manner (or directed to another party), or is it to be received at checkout. Valid values: "Yes" = Deferred receipt. "No" = Checkout receipt.

MemberOffer is a field representing whether an offer is open to the public or requires membership to a frequent shopper, loyalty or similar-type program. StaffAllowed is a field representing the employees of the store to which the offer has been routed. OfferType is a field representing whether the offer is being offered by a vendor or a store. OfferXactLimit is a field representing the maximum number of times

the offer may be used by a customer per transaction. OfferCustLimit is a field representing the maximum number of times the offer may be used by a customer across transactions. OfferStartDateTime is an aggregate field representing the date and time when the offer becomes active (broken down by year, month, day, hour and minute), while OfferEndDateTime is an aggregate field representing the date and time after which the offer may not be used (broken down by year, month, day, hour and minute). OfferDescription is a field representing a text description of the offer, which is preferably printed out on the customer's checkout receipt upon redemption. OfferReportDescription is a field representing a text description of the offer for reporting purposes, such as offer performance analysis. OfferSponsorSettlementID is a field representing the unique number used to identify the sponsor of each offer. DeferredReward is a field indicating whether a reward associated with an offer is to be received in a deferred manner or directed to another party. One skilled in the art can appreciate that the number and type of offer properties may vary depending on the application.

A representative sample of the plurality of conditions required for redeeming an offer through system 10 is identified in tabular format as shown below.

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX/Offer/OfferMaintReq/OfferConditions	Aggregate	0	Once	Optional	Offer Conditions: Encapsulates the Conditions applicable to @OfferID. This element is required when ../Offer/@Action = "Add" or "Replace". It is not required when ../Offer/@Action = "Delete".
/@ConditionSetCount	String	1	Once	Required	Condition Set Count: Number of Condition Set instances in this document. Value = 1 - 7
../ConditionSet[]	Aggregate List	0	One or Many	Required	Condition Set: Encapsulates the details of a single Condition Set. This

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
					element must contain only one of the following available Condition Set type elements: ItemPurchase DeptPurchase TotalPurchase TimeOfDay DayOfWeek
../ConditionSet[]/ @ConditionSetID	Enumerated String	1	Once	Required	Condition Set ID: Value = 0 - 7 Value must be mutually exclusive with other @ConditionSetID values and /SOX/Offer/OfferMaintReq/OfferRewards/ RewardSet[]/@RewardSetID values.
../ConditionSet[]/ ItemPurchase	Aggregate	0	Once	Optional	Item Purchase: Element which encapsulates the details of the ItemPurchase Condition Set type.
../ConditionSet[]/ ItemPurchase/@Measure	Enumerated String	8	Once	Required	Measure: Defines the basis on which this Condition Set type is measured. Valid values: Quantity Weight Amount Where "Amount" is a monetary amount. If "Weight" is specified, the Offer Distributor is responsible for ensuring that Items in ItemList are sold by weight.
../ConditionSet[]/ ItemPurchase/ItemList	Aggregate	0	Once	Required	Item List: Encapsulates items that may be purchased interchangeably to meet this Condition.
../ConditionSet[]/ ItemPurchase/ItemList/ @ItemCount	String	4	Once	Required	Item Count: The number of ..ItemList/Item[] entries to follow. Value = 1 - 9999
../ConditionSet[]/ ItemPurchase/ItemList/Item[]	String List	12	One or Many	Required	Item: UPC/EAN Code of eligible item without the check digit. All 12 digits must be specified even if leading zero's are needed. Compressed UPC is not permitted.
../ConditionSet[]/ ItemPurchase/CondChkFlg	String	1	Once	Required	Condition Check Flag: Valid values: "0" = Once conditions are met, rewards issued for all qualifying items thereafter. "1" = Conditions must be met each time to receive rewards.
../ConditionSet[]/ ItemPurchase/MeasureValue	String	10	Once	Required	Measure Value: Metric of ../ItemPurchase/@Measure required to be purchased. Value = 1 - 2147483647 If ../ItemPurchase/@Measure = Quantity, Value is in units. = Weight, Value is in hundredths of pounds. = Amount, Value is in cents.
../ConditionSet[]/ DeptPurchase	Aggregate	0	Once	Optional	Department Purchase: Element which encapsulates the

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
					details of the DeptPurchase Condition Set type. The Offer Distributor is responsible for the correct identification of departments. It is recommended that only the store operator uses this Condition Set type.
../ConditionSet[]/DeptPurchase/DeptList	Aggregate	0	Once	Required	Department List: Element encapsulating the store departments from which items may be purchased interchangeably to meet this Condition.
../ConditionSet[]/DeptPurchase/DeptList/@DeptCount	String	4	Once	Required	Department Count: The number of ..DeptList/Dept[] entries to follow. Value = 1 - 9999
../ConditionSet[]/DeptPurchase/DeptList/Dept[]	String List	4	One or Many	Required	Department: Store department from which items must be purchased. Value = 1 - 9999
../ConditionSet[]/DeptPurchase/CondChkFlg	String	1	Once	Required	Condition Check Flag: Valid values: "0" = Once conditions are met, rewards issued for all qualifying items thereafter. "1" = Conditions must be met each time to receive rewards.
../ConditionSet[]/DeptPurchase/Amount	String	10	Once	Required	Amount: The monetary amount required to be purchased expressed in cents. Value = 1 - 2147483647
../ConditionSet[]/TotalPurchase/	Aggregate	0	Once	Optional	Total Purchase: Element which encapsulates the details of the TotalPurchase Condition Set type.
../ConditionSet[]/TotalPurchase/@Includes	Enumerated String	12	Once	Required	Includes: Defines whether "All" items or only those that are "Discountable" are included in the total of purchases to be evaluated. Valid values: All Discountable
../ConditionSet[]/TotalPurchase/CondChkFlag	String	1	Once	Required	Condition Check Flag: Valid values: "0" = Once conditions are met, rewards issued for all qualifying items thereafter. "1" = Conditions must be met each time to receive rewards.
../ConditionSet[]/TotalPurchase/Amount	String	10	Once	Required	Amount: The total monetary amount required to be purchased expressed in cents. Value = 1 - 2147483647
../ConditionSet[]/TimeOfDay	Aggregate	0	Once	Optional	Time Of Day: Element which encapsulates the details of the TimeOfDay Condition Set type.
../ConditionSet[]/TimeOfDay/StartTime	Aggregate	0	Once	Required	Start Time: Encapsulates the details of StartTime.
../ConditionSet[]/TimeOfDay/StartTim	String	2	Once	Required	Hour: Format: HH

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
e/Hour					Value: 00 - 23
../ConditionSet[]/ TimeOfDay/StartTim e/Minute	String	2	Once	Required	Minute: Format: MM Value: 00 - 59
../ConditionSet[]/ TimeOfDay/EndTime	Aggregate	0	Once	Required	End Time: Encapsulates the details of EndTime.
../ConditionSet[]/ TimeOfDay/EndTime/ Hour	String	2	Once	Required	Hour: Format: HH Value: 00 - 23
../ConditionSet[]/ TimeOfDay/EndTime/ Minute	String	2	Once	Required	Minute: Format: MM Value: 00 - 59
../ConditionSet[]/ DayOfWeek	Aggregate	0	Once	Optional	Day Of Week: Element which encapsulates the details of the DayOfWeek Condition Set type.
../ConditionSet[]/ DayOfWeek/Sunday	String	3	Once	Required	Sunday: Indicates whether the Offer is available on Sundays. Note that at least one of the days should have a "Yes" value. Valid values: Yes No
../ConditionSet[]/ DayOfWeek/Monday	String	3	Once	Required	Monday: Valid values: Yes No
../ConditionSet[]/ DayOfWeek/Tuesday	String	3	Once	Required	Tuesday: Valid values: Yes No
../ConditionSet[]/ DayOfWeek/Wednesda y	String	3	Once	Required	Wednesday: Valid values: Yes No
../ConditionSet[]/ DayOfWeek/Thursday	String	3	Once	Required	Thursday: Valid values: Yes No
../ConditionSet[]/ DayOfWeek/Friday	String	3	Once	Required	Friday: Valid values: Yes No
../ConditionSet[]/ DayOfWeek/Saturday	String	3	Once	Required	Saturday: Valid values: Yes No

Conditions are the rules or requirements for receiving the reward(s) associated with a particular offer. The conditions associated with an offer are defined by a plurality of condition sets. In one embodiment, there are five (5) types of condition sets, namely an item purchase condition set, a department purchase condition set, a total purchase condition set, a time of day condition set and a day of week condition set. The item purchase condition set identifies the item or items that must be purchased, which can be

broken down by quantity, weight and/or amount. The department purchase condition set identifies the department or departments from which each item must be purchased. The total purchase condition set identifies the amount of total purchases required. The time of day condition set identifies a time period during which rewards may be received. The day of week condition set identifies the day(s) of the week on which the rewards may be received. Each condition set is programmed such that once conditions are met, rewards are issued for all qualifying items. While only one condition set type is allowed for each condition set, more than one condition set may contain the same condition set type. One skilled in the art can appreciate, however, that the number and type of condition sets may vary depending on the application. In one embodiment, seven (7) condition sets may be defined. When multiple condition sets are specified, all of the conditions in each set must be met in order to receive the corresponding rewards.

A representative sample of the plurality of reward parameters available through system 10 is identified in tabular format below.

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX/Offer/OfferMaintReq/OfferRewards	Aggregate	0	Once	Optional	Offer Rewards: Encapsulates the Rewards applicable to @OfferID. This element is required when /SOX/Offer/@Action = "Add" or "Replace". It is not required when /SOX/Offer/@Action = "Delete".
../@RewardSetCount	String	1	Once	Required	Reward Set Count: Number of Reward Set instances in this document. Value = 1 - 7
../RewardSet[]	Aggregate List	0	One or Many	Required	Reward Set: Encapsulates the details of a single Reward Set. This element must contain only one of the following available Reward Set type elements: ItemDiscount DeptDiscount TotalDiscount FreeItem ReplacementPriceMethod1
../RewardSet[]/@Re	Enumerated	1	Once	Required	Reward Set ID:

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
wardSetID	String				Value = 0 - 7 Value must be mutually exclusive with other @RewardSetID values and /SOX/Offer/OfferMaintReq/OfferConditions/ ConditionSet[]/@ConditionSetID values.
../RewardSet[]/ItemDiscount	Aggregate	0	Once	Optional	Item Discount: Element which encapsulates the details of the ItemDiscount Reward Set type.
../RewardSet[]/ItemDiscount/ @Basis	Enumerated String	7	Once	Required	Basis: Defines the basis on which Rewards will be given: Valid values: "Percent" = Percentage off. "Amount" = Amount off.
../RewardSet[]/ItemDiscount/ ItemList	Aggregate	0	Once	Required	Item List: Element encapsulating the items that may receive this Reward.
../RewardSet[]/ItemDiscount/ ItemList/@ItemCount	String	4	Once	Required	Item Count: The number of ..ItemList/Item[] entries to follow. Value = 1 - 9999
../RewardSet[]/ItemDiscount/ ItemList/Item[]	String List	12	One or Many	Required	Item: UPC/EAN Code of eligible item without the check digit. All 12 digits must be specified even if leading zero's are needed. Compressed UPC is not permitted.
../RewardSet[]/ItemDiscount/ RewardLimit	String	2	Once	Required	Reward Limit: Maximum number of Rewards which can be issued each time the Conditions of the Offer are met. Value = 1 - 9, or -1 (= unlimited).
../RewardSet[]/ItemDiscount/ BasisValue	String	10	Once	Required	Basis Value: Metric of ../ItemDiscount/@Basis to be applied. If ../ItemDiscount/@Basis = Percent, then the value is the percentage discount in whole numbers. Value = 1 - 99 If ../ItemDiscount/@Basis = Amount, then the value is the discount amount in cents. Value = 1 - 2147483647 Note that the price of an item will never be reduced below zero.
../RewardSet[]/DeptDiscount	Aggregate	0	Once	Optional	Department Discount: Element which encapsulates the details of the DeptDiscount Reward Set type. The Offer Distributor is responsible for the correct identification of departments. It is recommended that only the store operator uses this Reward Set type.
../RewardSet[]/DeptDiscount/ @Basis	Enumerated String	7	Once	Required	Basis: Defines the basis on which Rewards will be given: Valid values:

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
					"Percent" = Percentage off. "Amount" = Amount off.
../RewardSet[]/DeptDiscount/DeptList	Aggregate	0	Once	Required	Department List: Element encapsulating the store departments whose items are eligible to receive this Reward.
../RewardSet[]/DeptDiscount/DeptList/@DeptCount	String	4	Once	Required	Department Count: The number of ..DeptList/Dept[] entries to follow. Value = 1 - 9999
../RewardSet[]/DeptDiscount/DeptList/Dept[]	String List	4	One or Many	Required	Department: Store department whose items are eligible to receive this Reward. Value = 1 - 9999
../RewardSet[]/DeptDiscount/RewardLimit	String	2	Once	Required	Reward Limit: Maximum number of Rewards which can be issued each time the Conditions of the Offer are met. Value = 1 - 9, or -1 (= unlimited).
../RewardSet[]/DeptDiscount/BasisValue	String	10	Once	Required	Basis Value: Metric of ../DeptDiscount/@Basis to be applied. If ../DeptDiscount/@Basis = Percent, then the value is the percentage discount in whole numbers. Value = 1 - 99 If ../DeptDiscount/@Basis = Amount, then the value is the discount amount in cents. Value = 1 - 2147483647 Note that the total value of purchases of items in eligible departments will never be reduced below zero.
../RewardSet[]/TotalDiscount	Aggregate	0	Once	Optional	Total Discount: Element which encapsulates the details of the TotalDiscount Reward Set type.
../RewardSet[]/TotalDiscount/@Basis	Enumerated String	7	Once	Required	Basis: Defines the basis on which Rewards will be given: Valid values: "Percent" = Percentage off. "Amount" = Amount off.
../RewardSet[]/TotalDiscount/RewardLimit	String	2	Once	Required	Reward Limit: Maximum number of Rewards which can be issued each time the Conditions of the Offer are met. Value = 1 - 9, or -1 (= unlimited).
../RewardSet[]/TotalDiscount/BasisValue	String	10	Once	Required	Basis Value: Metric of ../TotalDiscount/@Basis to be applied. If ../TotalDiscount/@Basis = Percent, then the value is the percentage discount in whole numbers. Value = 1 - 99 If ../TotalDiscount/@Basis = Amount, then the value is the discount amount in cents. Value = 1 - 2147483647 Note that the total value of purchases will never be reduced

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
					below zero.
../RewardSet[]/FreeItem	Aggregate	0	Once	Optional	Free Item: Element which encapsulates the details of the FreeItem Reward Set type.
../RewardSet[]/FreeItem/ItemList	Aggregate	0	Once	Required	Item List: Element encapsulating the items that may receive this Reward.
../RewardSet[]/FreeItem/ItemList/@ItemCount	String	4	Once	Required	Item Count: The number of ..ItemList/Item[] entries to follow. Value = 1 - 9999
../RewardSet[]/FreeItem/ItemList/Item[]	String List	12	One or Many	Required	Item: UPC/EAN Code of eligible item without the check digit. All 12 digits must be specified even if leading zero's are needed. Compressed UPC is not permitted.
../RewardSet[]/FreeItem/RewardLimit	String	2	Once	Required	Reward Limit: Maximum number of Rewards which can be issued each time the Conditions of the Offer are met. Value = 1 - 9, or -1 (= unlimited).
../RewardSet[]/ReplacementPriceMethod1	Aggregate	0	Once	Optional	Replacement Price Method 1: Element which encapsulates the details of the ReplacementPriceMethod1 Reward Set type. The replacement price to be applied follows IBM 4690 Supermarket Application pricing method 1 logic. Pricing methods 0, 2, 3, and 4 may be supported in future versions of the system, if required. This Reward Set type may not be used for weighed or NSC 02 items.
../RewardSet[]/ReplacementPriceMethod1/ItemList	Aggregate	0	Once	Required	Item List: Element encapsulating the items that may receive this Reward.
../RewardSet[]/ReplacementPriceMethod1/ItemList/@ItemCount	String	4	Once	Required	Item Count: The number of ..ItemList/Item[] entries to follow. Value = 1 - 9999
../RewardSet[]/ReplacementPriceMethod1/ItemList/Item[]	String List	12	One or Many	Required	Item: UPC/EAN Code of eligible item without the check digit. All 12 digits must be specified even if leading zero's are needed. Compressed UPC is not permitted.
../RewardSet[]/ReplacementPriceMethod1/DealPrice	String	8	Once	Required	Deal Price: Total price, in cents, of DealQuantity units. Value = 1 - 99999999
../RewardSet[]/ReplacementPriceMethod1/DealQuantity	String	2	Once	Required	Deal Quantity: Number of units received for DealPrice. Value = 1 - 99
../RewardSet[]/ReplacementPriceMethod1/RewardLimit	String	2	Once	Required	Reward Limit: Maximum number of Rewards which can be issued each time the Conditions of the Offer are met.

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
					Value = 1 - 9, or -1 (= unlimited).

Rewards are the benefits received by the customers when the conditions are met. The reward(s) associated with an offer are defined by a plurality of rewards sets. In one embodiment, there are five (5) reward set types, namely the item discount reward, the department discount reward, the total discount reward, the free item reward and the replacement price reward. One skilled in the art can appreciate, however, that the number and type of rewards may vary depending on the application. For example, rewards can be deferred to a third party, such as deposits directly into a mutual fund or a child's college fund.

The item discount reward is applied to the price of a specific item or item(s). The department discount reward is applied to the price of items in a certain department or departments. The total discount reward is applied to the total price of a customer's total purchases. The free item reward is applied to reduce the price of a specific item or items to zero. The replacement price reward is applied to replace an existing price for a specific item or items. While only one reward set type is allowed for each reward set, more than one reward set may contain the same reward set type. When multiple reward sets are specified, all possible rewards are given if the corresponding conditions are met.

Once the offers have been created, they are routed to the appropriate store or stores in which they are valid for redemption. A preferred format for offer store routing is provided below.

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX/Offer/OfferRouteReq	Aggregate	0	Once	Optional	Offer Route Request: Encapsulates all Offer store routing requests.
../StoreList[]	Aggregate	0	One	Required	Store List:

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
	List		or Many		Encapsulates details of all stores for which the same @Action is required for this @OfferID.
../StoreList[]/@Action	Enumerated String	7	Once	Required	Action: Defines maintenance operation to be performed for this @Offer for this StoreList[]. Valid values: Add Replace Delete
../StoreList[]/@StoreCount	String	10	Once	Required	Store Count: The number of ../StoreList/Store[] entries to follow. Value = 1 - 2147483647
../StoreList[]/Store[]	Aggregate List	0	One or Many	Required	Store: Encapsulates the details of one store.
../StoreList[]/Store[]/StoreID	String	10	Once	Required	Store ID: Assigned by ECN. Unique Store Identifier. Valid value: 1 - 2147483647
../StoreList[]/Store[]/ServicePriority	String	2	Once	Required	Service Priority: Indicates maximum processing delay for requested routing service. Supported values for the Pilot: "ON" = Overnight Beyond Pilot: "RT" = Real-time "15" = 15 Minutes "HR" = 1 Hour

The OfferRouteReq parameter encapsulates all offer store routing requests. The Storelist parameter encapsulates the details of all stores for which the same maintenance action is required for a particular offer. In particular, the @Action parameter defines the particular maintenance action to be performed for the list of stores identified by the Storelist parameter. The Storecount parameter identifies the number of stores to which to apply said action. The Store parameter encapsulates the details of one store, namely the identification value assigned to the store by network 13. The ServicePriority parameter identifies the maximum processing delay for the requested routing service (i.e., overnight, real-time, or set-time).

In a preferred embodiment, customer-specific variations can be introduced with respect to an offer through the CustomerOffer document type, which has the same header format as that for the Offer document type, with the value of the @SOXType parameter being "CustomerOffer." A customer offer contains replacement values for some of the offer properties and rewards that are "overlaid" on top of the "generic" offer values when a customer identifies himself or herself at the time of purchase, such as through a loyalty card. A preferred format for the maintenance, the offer properties, rewards and offer routing for the Customer Offer document type are similar to that for an Offer document type and are identified in tabular format below, respectively.

Customer Offer Maintenance Request

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX/CustomerOffer[]	Aggregate	0	One or Many	Required Always	Customer Offer: The /SOX/CustomerOffer[] aggregate element may contain: One /SOX/CustomerOffer[]/CustOfferMaintReq aggregate element and one /SOX/CustomerOffer[]/CustOfferRouteReq aggregate element; OR One /SOX/CustomerOffer[]/CustOfferMaintReq aggregate element only; OR One /SOX/CustomerOffer[]/CustOfferRouteReq aggregate element only.
../@OfferID	String	12	Once	Required Always	Offer ID: Number is provided by offer distributor and must be unique for that distributor. Value = 1 - 999999999999
../@MerchantID	String	10	Once	Required Always	Merchant ID: Assigned by ECN. Identifies the issuing organization for the Customer's loyalty card. Value: 1 - 2147483647
../@CustomerID	String	18	Once	Required Always	Customer ID: Normally, the Customer's loyalty card number for the merchant represented by @MerchantID.
../CustOfferMaintReq	Aggregate	0	Once	Optional	Customer Offer Maintenance Request: Encapsulates CustomerOffer maintenance request details for @OfferID and @MerchantID/@CustomerID above.

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
../CustOfferMaintReq/@Action	Enumerated String	8	Once	Required	Action: CustomerOffer maintenance action requested. Valid values: Add Replace Delete Activate

Customer Offer Properties

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX/CustomerOffer[]/CustOfferMaintReq/CustOfferProperties	Aggregate	0		Optional	CustomerOffer Properties: Contains CustomerOffer Properties for @OfferID for @MerchantID/@CustomerID above. This element is required when /SOX/CustomerOffer[]/@Action = "Add" or "Replace" or "Activate". It is not required when /SOX/CustomerOffer[]/@Action = "Delete".
../CustOfferXactLimit	String	2	Once	Required	Customer Offer Transaction Limit: Maximum number of times this offer may be used per transaction. Value = 0 - 9, or -1 (= unlimited). If value = 0, this CustomerOffer is not active.
../CustOfferCustLimit	String	2	Once	Required	Customer Offer Customer Limit: Total number of times this offer may be used, across transactions. Value = 0 - 9, or -1 (= unlimited).

Customer Offer Rewards

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX/CustomerOffer[]/CustOfferMaintReq/CustOfferRewards	Aggregate	0	Once	Optional	CustomerOffer Rewards: Contains CustomerOffer Rewards for @OfferID for @MerchantID/@CustomerID above. This element is required when /SOX/CustomerOffer[]/@Action = "Add" or "Replace". It is not required when /SOX/CustomerOffer[]/@Action = "Delete" or "Activate".
../@RewardSetCount	String	1	Once	Required	Reward Set Count: Number of Reward Set instances in this CustomerOffer[]. Value = 1 - 7
../RewardSet[]	Aggregate List	0	One or Many	Required	Reward Set: Encapsulates the details of a single Reward Set. This element must contain only one of the following available Reward Set type elements: ItemDiscount DeptDiscount

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
					TotalDiscount ReplacementPriceMethod1 Note that CustOfferRewards for FreeItem are not meaningful.
../RewardSet[]/@RewardSetID	Enumerated String	1	Once	Required	Reward Set ID: Value = 0 - 7 Value is determined by the @RewardSetID from the global @OfferID which is to be overlaid with the data in this RewardSet[]. Additionally, the @RewardSetID must refer to the same Reward Set type and be measured on the same @Basis as the global @OfferID, or an error will result. The system cannot successfully overlay the customer-specific data values onto the global Offer unless they are comparable.
../RewardSet[]/ItemDiscount	Aggregate	0	Once	Optional	Item Discount: Element which encapsulates the details of the ItemDiscount Reward Set type.
../RewardSet[]/ItemDiscount/@Basis	Enumerated String	7	Once	Required	Basis: Defines the basis on which Rewards will be given: Valid values: "Percent" = Percentage off. "Amount" = Amount off. See comments above regarding the need for compatibility with default rewards.
../RewardSet[]/ItemDiscount/BasisValue	String	10	Once	Required	Basis Value: Metric of ../ItemDiscount/@Basis to be applied. If ../ItemDiscount/@Basis = Percent, then the value is the percentage discount in whole numbers. Value = 1 - 99 If ../ItemDiscount/@Basis = Amount, then the value is the discount amount in cents. Value = 1 - 2147483647 Note that the price of an item will never be reduced below zero.
../RewardSet[]/DeptDiscount	Aggregate	0	Once	Optional	Department Discount: Element which encapsulates the details of the DeptDiscount Reward Set type.
../RewardSet[]/DeptDiscount/@Basis	Enumerated String	7	Once	Required	Basis: Defines the basis on which Rewards will be given: Valid values: "Percent" = Percentage off. "Amount" = Amount off. See comments above regarding the need for compatibility with default rewards.
../RewardSet[]/DeptDiscount/	String	10	Once	Required	Basis Value: Metric of

BasisValue					../ItemDiscount/@Basis to be applied. If ../ItemDiscount/@Basis = Percent, then the value is the percentage discount in whole numbers. Value = 1 - 99 If ../ItemDiscount/@Basis = Amount, then the value is the discount amount in cents. Value = 1 - 2147483647 Note that the price of an item will never be reduced below zero.
../RewardSet[]/TotalDiscount	Aggregate	0	Once	Optional	Total Discount: Element which encapsulates the details of the TotalDiscount Reward Set type.
../RewardSet[]/TotalDiscount/@Basis	Enumerated String	8	Once	Required	Basis: Defines the basis on which Rewards will be given: Valid values: "Percent" = Percentage off. "Amount" = Amount off. See comments above regarding the need for compatibility with default rewards.
../RewardSet[]/TotalDiscount/BasisValue	String	10	Once	Required	Basis Value: Metric of ../ItemDiscount/@Basis to be applied. If ../ItemDiscount/@Basis = Percent, then the value is the percentage discount in whole numbers. Value = 1 - 99 If ../ItemDiscount/@Basis = Amount, then the value is the discount amount in cents. Value = 1 - 2147483647 Note that the price of an item will never be reduced below zero.
../RewardSet[]/ReplacementPriceMethod1	Aggregate	0	Once	Optional	Replacement Price Method 1: Element which encapsulates the details of the ReplacementPriceMethod1 Reward Set type.
../RewardSet[]/ReplacementPriceMethod1/DealPrice	String	8	Once	Required	Deal Price: Total price, in cents, of DealQuantity units, where DealQuantity is defined in the default Rewards for @OfferID. Value = 1 - 99999999

Customer Offer Store Routing

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX/CustomerOffer[]/CustOfferRouteReq	Aggregate	0	Once	Optional	CustomerOffer Route Request: Encapsulates CustomerOffer[] store routing request details.
../StoreList[]	Aggregate List	0	One or Many	Required	Store List: Encapsulates details of all stores for which the same

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
					@Action is required for this @OfferID and @MerchantID/@CustomerID.
../StoreList[]/@Action	Enumerated String	7	Once	Required	Action: Defines maintenance operation to be performed for this StoreList[]. Valid values: Add Replace Delete Activate
../StoreList[]/@StoreCount	String	10	Once	Required	Store Count: The number of ../StoreList/Store[] entries to follow. Value = 1 - 2147483647
../StoreList[]/Store[]	Aggregate List	0	One or Many	Required	Store: Encapsulates the details of one store.
../StoreList[]/Store[]/ StoreID	String	10	Once	Required	Store ID: Assigned by ECN. Unique Store Identifier. Valid value: 1 - 2147483647
../StoreList[]/Store[]/ ServicePriority	String	2	Once	Required	Service Priority: Indicates maximum processing delay for requested routing service. Supported values for the Pilot: "15" = 15 Minutes "HR" = 1 Hour "ON" = Overnight "RT" = Real-time

As previously mentioned, the OfferAck document type is the positive acknowledgement returned by network 13 upon its successful processing of an offer document type. A preferred format for this type of document, including its header, is identified in a tabular format as shown below.

Header

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX	Aggregate	0	Once	Required Always	Document Root Element: Identifies this as a SOX XML document.
../@Version	String	3	Once	Required Always	SOX Version of File: Version of SOX to which this document conforms. Value = 1.0
../@SOXType	Enumerated String	8	Once	Required Always	Sox Type: Indicates type of SOX XML document. All SOX documents have this attribute with appropriate values. Value = OfferAck

Offer Document Acknowledgement.

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX/OfferAck	Aggregate	0	Once	Required	Offer Acknowledgement: Encapsulates the acknowledgement of the receipt of the Offer document.
../DistributorID	String	10	Once	Required	Distributor ID: @OfferDistributorID in the Offer document.
../AckRequested	Enumerated String	7	Once	Required	Acknowledgement Requested: @AckRequested in the Offer document.
../SenderDocUID	String	12	Once	Required	Sender's Document Unique ID: @SenderDocUID in the Offer document.
../SessionID	String	12	Once	Required	Session ID: Generated by ECN. ECN ID for the session in which the Offer document was transmitted to the ECN. May be used for audit trail purposes.
../OffRcptCtrlID	String	10	Once	Required	Offer Receipt Control ID: Generated by ECN. ECN identifier used for tracking the Offer document.
../SenderID	String	8	Once	Required	Sender ID: Generated by ECN. ECN user ID under which the Offer document was transmitted to the ECN.
../Date	Aggregate	0	Once	Required	Date: Generated by ECN. Date of OfferAck creation.
../Date/Year	String	4	Once	Required	Year: Format: CCYY
../Date/Month	String	2	Once	Required	Month: Format: MM
../Date/Day	String	2	Once	Required	Day: Format: DD
../Time	Aggregate	0	Once	Required	Time: Generated by ECN. Time of OfferAck creation.
../Time/Hour	String	2	Once	Required	Hour: Format: HH
../Time/Minute	String	2	Once	Required	Minute: Format: MM
../Time/Second	String	2	Once	Required	Second: Format: SS
../TimeZone	String	3	Once	Required	Time Zone: Generated by ECN. Time Zone for OfferAck creation timestamp.

With respect to the Offer Document Acknowledgement format, the DistributorID parameter identifies a unique identification value for the offer distributor distributing the offer. The AckRequested parameter reflects the requested level of acknowledgement

identified in the @AckRequested parameter of the header of the Offer document. The SenderDocUID parameter identifies the unique code identifying the XML document to its sender for audit trail purposes. The SessionID parameter is a unique identification value generated by network 13 identifying the session in which the Offer document was transmitted to it, and may also be used for audit trail purposes. The OffRcptCtrlID parameter is a unique identifier generated by network 13 for tracking the Offer document. The SenderID parameter is a unique identifier generated by network 13 representing the identity of the sender of the offer document under which the Offer document was transmitted to network 13. The Date and Time parameters are generated by the network 13 and identify the date and time, respectively, of the creation of the OfferAck document. A preferred format for the Offer Maintenance Request Acknowledgment and Offer Store Routing Acknowledgement are identified in tabular format below.

Offer Maintenance Request Acknowledgement

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX/Offer	Aggregate	0	Once	Required	Offer: Encapsulates results of Offer processing.
../@OfferID	String	12	Once	Required	Offer ID: @OfferID in the Offer document.
../OfferMaintReq	Aggregate	0	Once	Optional	Offer Maintenance Request: This element will exist if it was present in the processed Offer document. Encapsulates results of Offer maintenance processing.
../OfferMaintReq/@Action	Enumerated String	7	Once	Required	Action: @Action in the Offer document.
/SOX/Offer/OfferMaintReq/OfferProperties	Aggregate	0		Optional	Offer Properties: This element will exist if it was present in the processed Offer document. Encapsulates results of Offer Properties processing.
../Status	String	9	Once	Required	Status: Generated by ECN. Valid Values: Success
../Result	Aggregate	0	Once	Required	Result: See result structure above.
/SOX/Offer/OfferMa	Aggregate	0	Once	Optional	Offer Conditions:

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
intReq/ OfferConditions					This element will exist if it was present in the processed Offer document. Encapsulates results of Offer Conditions processing.
../@ConditionSetCount	String	1	Once	Required	Condition Set Count: Count of ../ConditionSet[] elements to follow.
../ConditionSet[]	Aggregate List	0	One or Many	Required	Condition Set: Encapsulates the results of processing this @ConditionSetID.
../ConditionSet[]/ @ConditionSetID	Enumerated String	1	Once	Required	Condition Set ID: @ConditionSetID in the Offer document.
../ConditionSet[]/ Status	String	9	Once	Required	Status: Generated by ECN. Valid Values: Success
../ConditionSet[]/ Result	Aggregate	0	Once	Required	Result: See result structure above.
/SOX/Offer/OfferMaintReq/ OfferRewards	Aggregate	0	Once	Optional	Offer Rewards: This element will exist if it was present in the processed Offer document. Encapsulates results of Offer Rewards processing.
../@RewardSetCount	String	1	Once	Required	Reward Set Count: Count of ../RewardSet[] elements to follow.
../RewardSet[]	Aggregate List	0	One or Many	Required	Reward Set: Encapsulates the results of processing this @RewardSetID.
../RewardSet[]/ @RewardSetID	Enumerated String	1	Once	Required	Reward Set ID: @RewardSetID in the Offer document.
../RewardSet[]/Status	String	9	Once	Required	Status: Generated by ECN. Valid Values: Success
../RewardSet[]/Result	Aggregate	0	Once	Required	Result: See result structure above.

Offer Store Routing Acknowledgement.

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX/Offer/OfferRouteReq	Aggregate	0	Once	Optional	Offer Routing Request: This element will exist if it was present in the processed Offer document. Encapsulates results of Offer routing processing.
../StoreList[]	Aggregate List	0	One or Many	Required	Store List: Encapsulates the details of stores for which the same @Action is required.
../StoreList[]/@Action	Enumerated String	7	Once	Required	Action: @Action in the Offer document.
../StoreList[]/@StoreCount	String	10	Once	Required	Store Count: Count of ../Store[] elements to follow.

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
../StoreList[]/Store[]	Aggregate List	0	One or Many	Required	Store: Encapsulates the details of one store.
../StoreList[]/Store[]/StoreID	String	10	Once	Required	Store ID: StoreID in the Offer document.
../StoreList[]/Store[]/ServicePriority	String	2	Once	Required	Service Priority: ServicePriority in the Offer document.
../StoreList[]/Store[]/Status	String	9	Once	Required	Status: Generated by ECN. Valid Values: Success Scheduled
../StoreList[]/Store[]/Result	Aggregate	0	Once	Required	Result: See result structure above.

Likewise, a preferred format for the CustomerOfferAck document type (which has the same header format with a value for the @SOXType parameter being "CustomerOfferAck," and includes Offer Document Acknowledgement, CustomerOffer Maintenance Request Acknowledgement and CustomerOffer Store Routing Acknowledgement are provided below.

Offer Document Acknowledgement

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX/CustOfferAck	Aggregate	0	Once	Required	CustomerOffer Acknowledgement: Encapsulates the acknowledgement of the receipt of the CustomerOffer document.
../DistributorID	String	10	Once	Required	Distributor ID: @OfferDistributorID in the CustomerOffer document.
../AckRequested	Enumerated String	7	Once	Required	Acknowledgement Requested: @AckRequested in the CustomerOffer document.
../SenderDocUID	String	12	Once	Required	Sender's Document Unique ID: @SenderDocUID in the CustomerOffer document.
../SessionID	String	12	Once	Required	Session ID: Generated by ECN. ECN ID for the session in which the CustomerOffer document was transmitted to the ECN. May be used for audit trail purposes.
../OffRcptCtrlID	String	10	Once	Required	Offer Receipt Control ID: Generated by ECN. ECN identifier used for tracking the CustomerOffer document.
../SenderID	String	8	Once	Required	Sender ID: Generated by ECN. ECN user ID under which the CustomerOffer document was transmitted to the ECN.
../Date	Aggregate	0	Once	Required	Date:

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
					Generated by ECN. Date of CustomerOfferAck creation.
../Date/Year	String	4	Once	Required	Year: Format: CCYY
../Date/Month	String	2	Once	Required	Month: Format: MM
../Date/Day	String	2	Once	Required	Day: Format: DD
../Time	Aggregate	0	Once	Required	Time: Generated by ECN. Time of CustomerOfferAck creation.
../Time/Hour	String	2	Once	Required	Hour: Format: HH
../Time/Minute	String	2	Once	Required	Minute: Format: MM
../Time/Second	String	2	Once	Required	Second: Format: SS
../TimeZone	String	3	Once	Required	Time Zone: Generated by ECN. Time Zone for CustomerOfferAck creation timestamp.

Customer Offer Maintenance Request Acknowledgement

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX/CustomerOffer	Aggregate	0	One or Many	Required	CustomerOffer: Encapsulates results of CustomerOffer processing.
../@OfferID	String	12	Once	Required	Offer ID: @OfferID in the CustomerOffer document.
../@MerchantID	String	10	Once	Required	Merchant ID: @MerchantID in the CustomerOffer document.
../@CustomerID	String	18	Once	Required	Customer ID: @CustomerID in the CustomerOffer document.
../CustOfferMaintReq	Aggregate	0	Once	Optional	CustomerOffer Maintenance Request: This element will exist if it was present in the processed CustomerOffer document. Encapsulates results of CustomerOffer maintenance processing.
../CustOfferMaintReq/@Action	Enumerated String	7	Once	Required	Action: @Action in the CustomerOffer document.
/SOX/CustomerOffer/CustOfferMaintReq/CustOfferProperties	Aggregate	0		Optional	CustomerOffer Properties: This element will exist if it was present in the processed CustomerOffer document. Encapsulates results of CustomerOffer Properties processing.
../Status	String	9	Once	Required	Status: Generated by ECN. Valid Values: Success
../Result	Aggregate	0	Once	Required	Result: See result structure above.

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX/CustomerOffer / CustOfferMaintReq/ CustOfferRewards	Aggregate	0	Once	Optional	CustomerOffer Rewards: This element will exist if it was present in the processed CustomerOffer document. Encapsulates results of CustomerOffer Rewards processing.
../@RewardSetCount	String	1	Once	Required	Reward Set Count: Count of ../RewardSet[] elements to follow.
../RewardSet[]	Aggregate List	0	One or Many	Required	Reward Set: Encapsulates the results of processing this @RewardSetID.
../RewardSet[]/@RewardSetID	Enumerated String	1	Once	Required	Reward Set ID: @RewardSetID in the CustomerOffer document.
../RewardSet[]/Status	String	9	Once	Required	Status: Generated by ECN. Valid Values: Success
../RewardSet[]/Result	Aggregate	0	Once	Required	Result: See result structure above.

Customer Offer Store Routing Acknowledgement

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX/CustomerOffer / CustOfferRouteReq	Aggregate	0	Once	Optional	CustomerOffer Routing Request: This element will exist if it was present in the processed CustomerOffer document. Encapsulates results of Offer routing processing.
../StoreList[]	Aggregate List	0	One or Many	Required	Store List: Encapsulates the details of stores for which the same @Action is required.
../StoreList[]/@Action	Enumerated String	7	Once	Required	Action: @Action in the CustomerOffer document.
../StoreList[]/@StoreCount	String	10	Once	Required	Store Count: Count of ../Store[] elements to follow.
../StoreList[]/Store[]	Aggregate List	0	One or Many	Required	Store: Encapsulates the details of one store.
../StoreList[]/Store[]/ StoreID	String	10	Once	Required	Store ID: StoreID in the Offer document.
../StoreList[]/Store[]/ ServicePriority	String	2	Once	Required	Service Priority: ServicePriority in the Offer document.
../StoreList[]/Store[]/ Status	String	9	Once	Required	Status: Generated by ECN. Valid Values: Success Scheduled
../StoreList[]/Store[]/ Result	Aggregate	0	Once	Required	Result: See result structure above.

As previously mentioned, the ErrorResponse document type is the negative acknowledgement returned by the network 13 upon encountering an error in the course of

processing an Offer or Customer Offer document type. ErrorResponse documents adhere to the DTD represented as SOXErrorResponse.dtd in Appendix 1. The header for this document type is the same as that for the OfferAck and CustomerOfferAck document types, with the exception that the value for @SOXType parameter is "ErrorResponse." A preferred format for this document is shown in tabular format below.

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX/ErrorResponse	Aggregate	0	Once	Required	Error Response: Encapsulates the acknowledgement of the receipt of the Offer or CustomerOffer document.
../SenderDocUID	String	12	Once	Required	Sender's Document Unique ID: @SenderDocUID in the Offer or CustomerOffer document.
../ErrorCode	String	10	Once	Required	Error Code: Generated by ECN. Assigned according to the type and source of the Error Code.
../ErrorDescription	String	255	Once	Required	Error Description: Generated by ECN. The Error default text.
../ErrorCondition	String	255	Once	Required	Error Condition: Generated by ECN. Used to further explain the conditions that cause this Error code.
../ErrorMessage	String	255	Once	Required	Error Message: Generated by ECN.
../ErrorSource	String	255	Once	Required	Error Source: Generated by ECN.
../Date	Aggregate	0	Once	Required	Date: Generated by ECN. Date of ErrorResponse creation.
../Date/Year	String	4	Once	Required	Year: Format: CCYY
../Date/Month	String	2	Once	Required	Month: Format: MM
../Date/Day	String	2	Once	Required	Day: Format: DD
../Time	Aggregate	0	Once	Required	Time: Generated by ECN. Time of ErrorResponse creation.
../Time/Hour	String	2	Once	Required	Hour: Format: HH
../Time/Minute	String	2	Once	Required	Minute: Format: MM
../Time/Second	String	2	Once	Required	Second: Format: SS
../TimeZone	String	3	Once	Required	Time Zone: Generated by ECN. Time Zone for ErrorResponse creation timestamp.
../SessionID	String	12	Once	Required	Session ID: Generated by ECN. ECN ID for the session in which the CustomerOffer document was transmitted to the ECN. May be used for audit trail purposes.

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
../OffRcptCtrlID	String	10	Once	Required	Offer Receipt Control ID: Generated by ECN. ECN identifier used for tracking the Offer or CustomerOffer document.
../SenderID	String	8	Once	Required	Sender ID: Generated by ECN. ECN user ID under which the Offer or CustomerOffer document was transmitted to the ECN.
../DTDErrorList	Aggregate	0	Once	Required	DTD Error List: Generated by ECN. Encapsulates reporting of DTD violations.
.. /DTDErrorList/ @DTDErrorCount	String	10	Once	Required	DTD Error Count: Count of ../DTDError[] elements to follow.
../DTDErrorList/ DTDError[]	Aggregate List	0	One or Many	Required	DTD Error: Encapsulates the details of one DTD error.
../DTDErrorList/ DTDError[]/PathNam e	String	255	Once	Required	Path Name: Path of DTD Error within the XML document.
../DTDErrorList/ DTDError[]/ErrorCo de	String	10	Once	Required	Error Code: Assigned according to the type and source of the Error Code.
../DTDErrorList/ DTDError[]/ErrorMe ssage	String	255	Once	Required	Error Message: Text description of the DTD Error.

In particular, the parameter SenderDocUID represents the unique code identifying the XML document to its sender. The ErrorCode parameter represents the code assigned by the network 13 for the type and source of the error. The ErrorDescription parameter represents a description of the error generated by the network 13. The ErrorCondition parameter is generated by the network 13 and represents the condition(s) that caused the generation of the error code. The ErrorMessage parameter identifies an error message generated by the network 13 based on the error code. The ErrorSource parameter represents the source of the error generated by the network 13. The Date and Time parameters identify the date and time, respectively, in which the ErrorResponse document is created. The SessionID parameter represents the identification value assigned by the network 13 for the session in which the Offer or CustomerOffer document was transmitted to the network 13. The OfrRptCtrlID parameter represents an

identifier generated by the network 13 which is used for tracking the Offer or CustomerOffer document. The ServerID parameter represents the identification value generated by the network 13 under which the Offer or OfferCustomer document was transmitted to the network 13. The DTDErrorList element encapsulates the reporting of DTD violations, including the count of error containing elements to follow, the details of each DTD error, which comprises the path of the DTD error within the XML document, the error code, and the error message.

The details of the offers being distributed by each offer distributor 12 are electronically communicated to a network server 22 of system 10, such as an IBM RS6000 server, preferably in real time. Connections to server 22 are made over the Internet via the HTTP protocol using X.509 certificates to identify and authenticate the sender. Server 22 is configured to receive and authenticate all offers having a uniform format such as that previously described herein. With respect to offers distributed to customers in a non-interactive medium, the offer details are communicated to server 22 prior to being presented to the customers. In the case of a kiosk offer distributor, the offer is distributed via a communications network (not shown), such as the Internet, to a kiosk 16 in communication therewith. Kiosk 16 may be directly in communication with the POS system 27 of the store in which it is located.

System 10 generates point-of-sale (POS) maintenance files that reflect all of the offers received from the offer distributors 12 and authenticated by server 22. These files are stored within a database of network 13 (not shown), preferably in a consolidated manner whereby information related to all offers available from various offer distributors at a given retailer can be viewed online by customers via a browser interface 30 thereto.

These files may be forwarded to the appropriate retailer 26 for placement on the POS systems 27 of the relevant stores 28 in which the offer is valid or a server of network 13 such as server 22 may place the files directly on the POS system 27 of the relevant stores 28 in which the offer is valid.

In one embodiment, network 13 provides for the possibility of coooperation between agents and partners in presenting offers to customers or in recording the customer's acceptance of an offer. Once a business relationship between the cooperating parties is established, the network 13 sets up the proper information pathways so that the XML documents created by the network 13 can be routed to agents or partners for the purpose of synchronizing information between the parties so that everyone has an exact copy of the information received by the network 13 from the offer distributors 12. The preferred formats of the relevant Offer Agent Server Routing, CustomerOffer Agent Server Routing, Agent Server Offer Acknowledgement and Agent Server Customer Offer Acknowledgement documents are described below.

Offer Agent Server Routing

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX/TargetServerList	Aggregate	0	Once	Optional	Target Server List: This element is not required. Defines Agent servers to which this document is to be forwarded.
../@ServerCount	String	6	Once	Required	Server Count: The number of ../TargetServerList/Server[] entries to follow. Value = 1 - 999999
../Server[]	Aggregate List	0	One or Many	Required	Server: Encapsulates details for one Agent server.
../Server[]ServerID	String	6	Once	Required	Agent Server ID: Assigned by the ECN Target Agent Server ID to Receive a copy of this document. Value = 1 - 999999
../Server[]/ServicePriority	String	2	One	Required	Service Priority: Indicates maximum processing delay for requested routing service. Supported values:

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
					"15" = 15 Minutes "HR" = 1 Hour "ON" = Overnight "RT" = Real-time

CustomerOffer Agent Server Routing

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX/TargetServerList	Aggregate	0	Once	Optional	Target Server List: This element is not required. Defines Agent servers to which this document is to be forwarded.
../@ServerCount	String	6	Once	Required	Server Count: The number of ../TargetServerList/Server[] entries to follow. Value = 1 - 999999
../Server[]	Aggregate List	0	One or Many	Required	Server: Encapsulates details for one Agent server.
../Server[]/ServerID	String	6	Once	Required	Agent Server ID: Assigned by the ECN. Target Agent Server ID to receive a copy of this document. Value = 1 - 999999
../Server[]/ServicePriority	String	2	Once	Required	Service Priority: Indicates maximum processing delay for requested routing service. Supported values: "15" = 15 Minutes "HR" = 1 Hour "ON" = Overnight "RT" = Real-time

Agent Server Offer Acknowledgement

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX/TargetServerList	Aggregate	0	Once	Optional	Target Server List: This element will exist if it was present in the Offer document, and encapsulates the results of Server Routing Request processing.
../@ServerCount	String	6	Once	Required	Server Count: Count of ../TargetServerList/Server[] elements to follow. Value = 1 - 999999
../Server[]	Aggregate List	0	One or Many	Required	Server: Encapsulates details for one Agent server.
../Server[]/ServerID	String	6	Once	Required	ServerID: Requested ServerID.
../Server[]/ServicePriority	String	2	Once	Required	Service Priority: Requested service priority.
../Server[]/Status	String	9	Once	Required	Status: Generated by ECN. Valid Values: Success Scheduled
../Server[]/Result	Aggregate	0	Once	Required	Result: See result structure above.

Agent Server Customer Offer Acknowledgement

XML Element/Attribute Tag	Data Type	Max Len	Occur	Usage	Description
/SOX/TargetServerList	Aggregate	0	Once	Optional	Target Server List: This element will exist if it was present in the CustomerOffer document, and encapsulates the results of Server Routing Request processing.
../@ServerCount	String	6	Once	Required	Server Count: Count of ../TargetServerList/Server[] elements to follow. Value = 1 - 999999
../Server[]	Aggregate List	0	One or Many	Required	Server: Encapsulates details for one Agent server.
../Server[]/ServerID	String	6	Once	Required	ServerID: Requested ServerID.
../Server[]/ServicePriority	String	2	Once	Required	Service Priority: Requested service priority.
../Server[]/Status	String	9	Once	Required	Status: Generated by ECN. Valid Values: Success Scheduled
../Server[]/Result	Aggregate	0	Once	Required	Result: See result structure above.

Customers redeem offers at a store electronically preferably via their loyalty cards or some other identification mechanism during the checkout process. The POS system 26 of that store integrates the offer details in the POS maintenance files received from server 22 into its POS master offer detail files so that the condition(s) associated with the offers can be validated. In a preferred embodiment, the validation is performed by FREEDOM-Shopper sold by Matra Systems. In one embodiment, this process is performed in batch mode given the processing-intensive nature of the operation that could adversely affect daily checkout operations.

POS system 26 generates transaction log files for any transactions at the stores 28 involving offers distributed by the offer distributors 12. These transaction log files are forwarded to system 10 for clearance and settlement. Clearing is the set of functions

required to collect and analyze the transaction log files received by POS system 26 to extract the detail of the rewards given or due to customers, and to prepare the details of settlement required by the settlement agent. Clearing also includes extracting information from the transaction log files and comparing it against the corresponding offer details stored within the databases of network 13 in order to validate same. In one embodiment, clearance is performed via a program on the server 22 of the network 13. In a preferred embodiment, offer distributors 12 are notified of the redemption of their respective offers by means of a query service or XML-based data feed provided by server 22.

Once each offer is cleared, settlement of the offer with the appropriate settlement agent is performed. Settlement is the process of ensuring that the financial obligations associated with each offer are carried out. Specifically, the retailer is reimbursed for the value of rewards deducted from customer transactions involving offers. Payment must be arranged for fees due to the retailer and other parties for the processing and handling of the offer. Such settlement details are communicated electronically to a settlement agent 34 to complete settlement of the offer with the respective parties to the transaction.

Due to the centralized nature of the system 10 and the standardization of offers provided by the network 13, retailers can automatically accept offers from a plurality of different offer distributors, thereby relieving their burden to maintain sophisticated customer/price management systems. Moreover, system 10 allows paperless offer clearing at the POS level. In addition, system 10 provides for automatic settlement of offers which helps accelerate payment of the financial obligations associated therewith. In addition, given the centralized nature of the transaction information stored within the

network 13, directories can be set up by network 13 whereby offer distributors, customers, stores, and other interested parties can easily look up information related to offers provided thorugh network 13.

Furthermore, network 13 provides for the dynamic targeting of customers. The value of customer targeting is derived from wasting less money on promotional activity. Promotions are inherently wasteful because a large amount of the expenditures are not used to alter customer behavior. Promotion costs can be classified primarily into three areas; namely media costs, redemption costs and handling and administrative costs. Media costs are the cost of exposing customers to a promotion offer. Media costs include the advertising cost for placing promotional ads in newspapers, magazines, or on the Internet offer, and direct mail cost to send offers to households. Redemption costs are the cost of the discount. Cash discounts and other rewards have direct costs. Handling and administrative costs are inherent with coupon offers, which generally have costs associated with having the coupons counted and for billing and administration. Additionally, coupon issuers provide a fee to the retailer to cover their costs in handling the coupon. Moreover, all promotions require systems to accrue, track and generally administer promotions.

The value of an offer is equal to the profit for incremental sales less the sum of media, redemption and handling and administrative costs associated therewith. Targeting offers can impact the value of an offer dramatically by lowering the overall costs and more particularly the cost per incremental case. Dynamic customer targeting is greatly enhanced by the system 10, specifically, due to the centralized nature in which the network 13 manages offer transactions. In particular, system 10 categorizes customer

profiles into three types; namely static, persistent and dynamic. Static profiles represent lifestyle and geo-demographic characteristics and are not changed by marketing activities. Persistent profiles are characterized by buying behavior that is relatively stable and only somewhat altered by marketing activities. Dynamic profiles are characterized by buying behavior that can directly be attributed to marketing activities like discounts and new product introductions.

Referring now to Fig. 2, the process of dynamic customer targeting according to the present invention is described. For the purposes of discussion, it will be assumed that customers are identified to the network 13 through a loyalty card. However, it can be appreciated by one skilled in the art that any method of customer identification can be used. At 100, a customer is identified via a loyalty card being scanned at the checkout counter of a store. At 102, the POS system of that store tracks a plurality of information such as the customer's identification number, the time, the checkout lane, the products purchased, the prices paid and the quantities purchased. At 104, the POS system matches this information with information stored within the POS system, such as full pricing information, discount information, display activity, advertising activity and baseline sales, to create a customer profile. At 106, the profile is transmitted to the network 13 and at 108, the profile is appended to a "master" database stored within a database of the network 13. At 110, the customer profile is queried against this database to create the static, persistent and dynamic profiles at 112. At 114, the customer profiles are forwarded to the appropriate offer distributor 12 so they can dynamically target customers based on such profiles.

To illustrate the advantages of dynamic profiling, Figs. 3A-D illustrate an example of an offer for spaghetti sauce distributed based on a non-targeted profile, a static profile, a persistent profile and a dynamic profile, respectively. As shown, the dynamic profile provides a net value of $24,000, while the non-targeted and static profiles provide no value, and the persistent profile provides only a $3,975 value. Therefore, for spaghetti sauce, it is unlikely that static profile will greatly distinguish large numbers of spaghetti sauce customers from non-spaghetti sauce customer. In other words, static profile type offers will not add to the value of the promotion.

The foregoing constitutes a description of various features of a preferred embodiment. Numerous changes to the preferred emobidment are possible without departing from the spirit and scope of the invention. Hence, the scope of the invention should be determined with reference not to the preferred embodiment, but to the following claims:

We claim:

1. An electronic offer management system for offer transactions, comprising:

receiving means for receiving information related to a plurality of offers distributed by a plurality of different offer distributors to customers for redemption at a plurality of stores;

routing means for automatically routing the information related to each offer to a point-of-sale system of each store in which the offer can be redeemed; and

clearing means for automatically clearing the offers redeemed by the customers at the stores.

2. The system of claim 1, further comprising settlement means for automatically reconciling financial obligations associated with each offer cleared by the clearing means, whereby a single, electronic audit of each offer transaction can be achieved.

3. The system of claim 1, wherein the clearing means comprises:

means for receiving redemption information from the stores; and

means for comparing the redemption information to the offer information whereby each offer redeemed by the customers can be validated.

4. The system of claim 1, wherein the plurality of offer distributors comprises at least one of an internet offer distributor, a retailer offer distributor, a kiosk offer distributor, a direct mail offer distributor, and an email offer distributor.

5. The system of claim 1, further comprising activation means for selectively activating and deactivating each offer.

6. The system of claim 1, further comprising profiling means for dynamically profiling the customers so that the offers can be targeted to specific customers.

7. The system of claim 1, wherein each offer corresponds to a reward, and wherein the system further comprises reward deferral means for deferring issuance of the reward to a third party.

8. The system of claim 1, further comprising offer consolidation means for consolidating the offers available through the system for presentation to the customer at a plurality of levels.

9. The system of claim 8, wherein the plurality of levels comprises at least one of an offer distributor level and a store level.

10. The system of claim 1, wherein the offer information comprises at least one condition and wherein the at least one condition is at least one of an item purchase condition, a department purchase condition, a total purchase condition, a time of day condition and a day of the week condition.

11. The system of claim 6, wherein the profiling means comprises at least one of a static profile, a persistent profile and a dynamic profile.

12. A method of electronic management of offer transactions, comprising:

receiving information related to a plurality of offers distributed by a plurality of different offer distributors to customers for redemption at a plurality of stores;

automatically routing the information of each offer to a point-of-sale system of each store in which the offer can be redeemed; and

automatically clearing the offers redeemed by the customers at the stores.

13. The method of claim 12, further comprising the step of automatically reconciling financial obligations associated with each cleared offer whereby a single, electronic audit of each offer transaction can be achieved.

14. The method of claim 12 wherein the method further comprises the step of receiving redemption information from the stores, and comparing the redemption information to the offer information whereby each offer redeemed by the customers can be validated.

15. The method of claim 12, further comprising the step of selectively activating each offer.

16. The method of claim 12, wherein each offer corresponds to a reward, and wherein the method further comprises the step of deferring issuance of the reward to a third party.

17. The method of claim 12, further comprising the step of consolidating the offers for presentation to the customer at a plurality of levels.

18. The method of claim 17, wherein the plurality of levels comprises at least one of an offer distributor level and a store level.

19. The method of claim 12, further comprising the step of dynamically profiling the customers so that the offers can be targeted to specific customers.

20. The method of claim 12, wherein the offer information comprises at least one condition and wherein the at least one condition is at least one of an item purchase condition, a department purchase condition, a time of day condition and a day of the week condition.

ABSTRACT

An electronic offer management system and method thereof is disclosed. In particular, the system comprises means for receiving information related to a plurality of offers distributed by a plurality of different offer distributors to customer for redemption at plurality of stores, means for automatically routing the information related to an offer to a point-of-sale system of each store in which the offer can be redeemed, and means for automatically clearing the offers redeemed by the customer at the stores. The system further comprises means for automatically reconciling financial obligations associated with each cleared offer, as well means for dynamically profiling customers so that improved offer targeting can be achieved.

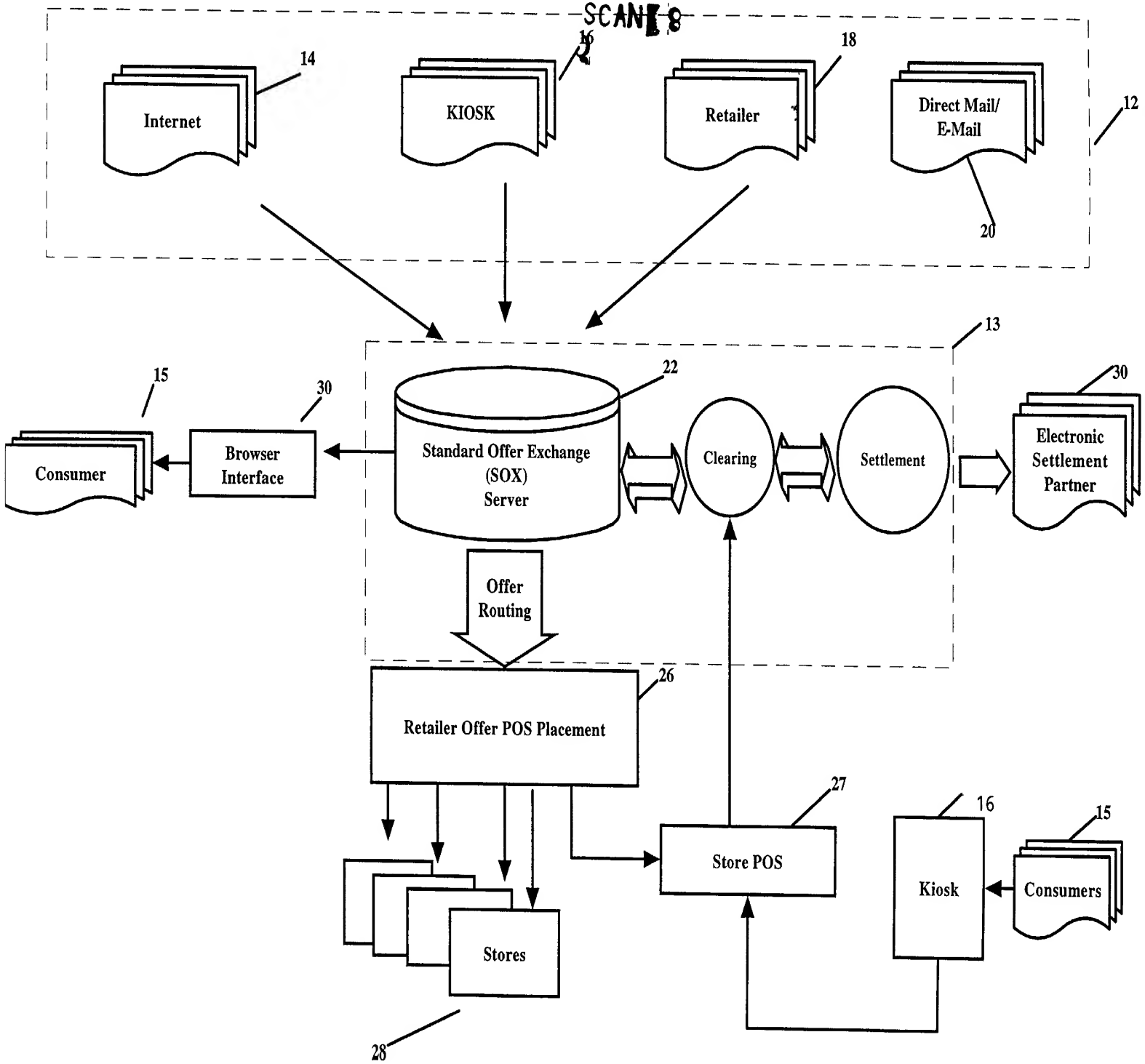
SCANNED
Internet
14
KIOSK
16
Retailer
18
Direct Mail/
E-Mail
12
20
13
15
30
22
Consumer
Browser
Interface
Standard Offer Exchange
(SOX)
Server
Clearing
Settlement
30
Electronic
Settlement
Partner
Offer
Routing
26
Retailer Offer POS Placement
27
Store POS
16
Kiosk
15
Consumers
Stores
28

Fig. 1

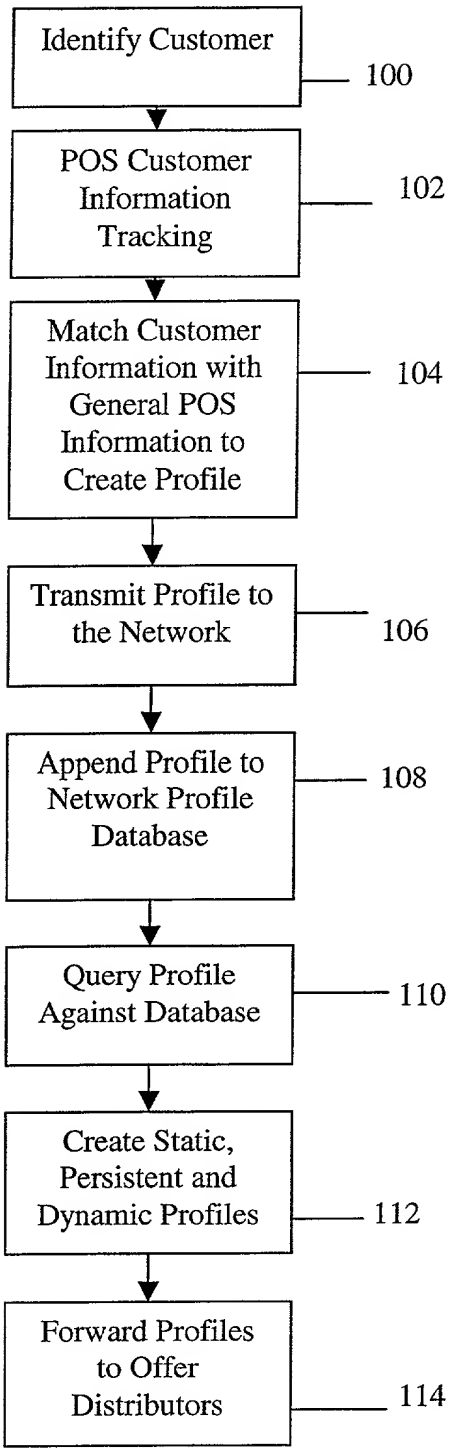
Identify Customer
100
POS Customer Information Tracking
102
Match Customer Information with General POS Information to Create Profile
104
Transmit Profile to the Network
106
Append Profile to Network Profile Database
108
Query Profile Against Database
110
Create Static, Persistent and Dynamic Profiles
112
Forward Profiles to Offer Distributors
114

FIG. 2

			Media	Total Media	Redemption				Total
	Population	Circulation	Cost/M	Cost	Rate	Redeemers	Discount	Handling	Cost
Non Sauce Users	400,000	400,000	$7.50	$3,000	0%	-	$0.50	$0.15	$3,000
Sauce Users	1,100,000	1,100,000	$7.50			-			$0
Brand Loyal	275,000	275,000	$7.50	$2,063	50%	137,500	$0.50	$0.15	$91,438
Brand Preferred	235,000	235,000	$7.50	$1,763	30%	70,500	$0.50	$0.15	$47,588
Brand Switchers	500,000	500,000	$7.50	$3,750	40%	200,000	$0.50	$0.15	$133,750
Brand Loyal to Competitor	90,000	90,000	$7.50	$675	0%	-	$0.50	$0.15	$675
Total Population	1,500,000	1,500,000		$11,250					$276,450

	Percent Incremental Purchases	Incremental Purchases	Cost per Incremental Purchase
Non Sauce Users	0%	-	NA
Sauce Users			
Brand Loyal	0%	-	NA
Brand Preferred	25%	17,625	$2.70
Brand Switchers	60%	120,000	$1.11
Brand Loyal to Competitor	0%	-	NA
Total		137,625	**$2.01**

Summary	
Cost	
Media	$11,250
Redemption	$204,000
Admin.	$61,200
Value	
Incremental Margin	$240,844
Cost	$276,450
Net Value	($35,606)

FIG. 3A

			Media	Total Media	Redemption				Total
	Population	Circulation	Cost/M	Cost	Rate	Redeemers	Discount	Handling	Cost
Non Sauce Users	400,000	300,000	$8.50	$2,550	0%	-	$0.50	$0.15	$2,550
Sauce Users	1,100,000		$8.50			-			$0
Brand Loyal	275,000	275,000	$8.50	$2,338	50%	137,500	$0.50	$0.15	$91,713
Brand Preferred	235,000	235,000	$8.50	$1,998	30%	70,500	$0.50	$0.15	$47,823
Brand Switchers	500,000	500,000	$8.50	$4,250	40%	200,000	$0.50	$0.15	$134,250
Brand Loyal to Competitor	90,000	90,000	$8.50	$765	0%	-	$0.50	$0.15	$765
Total Population	1,500,000	1,400,000		$11,900					$277,100
	Percent		Cost per						
	Incremental	Incremental	Incremental						
	Purchases	Purchases	Purchase				Summary		
Non Sauce Users	0%	-	NA						
Sauce Users					Cost				
Brand Loyal	0%	-	NA		Media		$11,900		
Brand Preferred	25%	17,625	$0.00		Redemption		$204,000		
Brand Switchers	60%	120,000	$0.76		Admin.		$61,200		
Brand Loyal to Competitor	0%	-	NA		Value				
Total		137,625	**$2.01**		Incremental Margin		$240,844		
					Cost		$277,100		
					Net Value		($36,256)		

FIG. 3B

			Media	Total Media	Redemption				Total
	Population	Circulation	Cost/M	Cost	Rate	Redeemers	Discount	Handling	Cost
Non Sauce Users	400,000	-	$15.00	$0	0%	-	$0.50	$0.15	$0
Sauce Users	1,100,000					-			
Brand Loyal	275,000	275,000	$15.00	$4,125	15%	41,250	$0.25	$0.15	$20,625
Brand Preferred	235,000	235,000	$15.00	$3,525	40%	94,000	$0.75	$0.15	$88,125
Brand Switchers	500,000	500,000	$15.00	$7,500	40%	200,000	$0.50	$0.15	$137,500
Brand Loyal to Competitor	90,000	90,000	$15.00	$1,350	5%	4,500	$1.50	$0.15	$8,775
Total Population	1,500,000	1,100,000		$16,500					$255,025
	Percent		Cost per						
	Incremental	Incremental	Incremental						
	Purchases	Purchases	Purchase				Summary		
Non Sauce Users	0%	-	NA						
Sauce Users					Cost				
Brand Loyal	0%	-	NA		Media		$16,500		
Brand Preferred	25%	23,500	$0.00		Redemption		$187,563		
Brand Switchers	60%	120,000	$0.17		Admin.		$50,963		
Brand Loyal to Competitor	100%	4,500	$19.58		Value				
Total		148,000	**$1.72**		Incremental Margin		$259,000		
					Cost		$255,025		
					Net Value		$3,975		

FIG. 3C

			Media	Total Media	Rate of	Number of			Total
	Population	Circulation	Cost/M	Cost	Redemption	Redemptions	Discount	Handling	Cost
Non Sauce Users	400,000	-	$15.00	$0	0%	-	$0.50	$0.15	$0
Sauce Users	1,100,000					-			
Brand Loyal	275,000	-	$15.00	$0	15%	-	$0.25	$0.15	$0
Brand Preferred Price Sensitive	175,000	175,000	$15.00	$2,625	45%	78,750	$0.70	$0.15	$69,563
Brand Preferred Not Price Sensitive	60,000	60,000	$15.00	$900	20%	12,000	$0.25	$0.15	$5,700
Brand Switchers Price Sensitive	375,000	375,000	$15.00	$5,625	50%	187,500	$0.65	$0.15	$155,625
Brand Switchers Not Price Sensitive	125,000	125,000	$15.00	$1,875	20%	25,000	$0.25	$0.15	$11,875
Brand Loyal to Competitor	90,000	90,000	$15.00	$1,350	5%	4,500	$1.50	$0.15	$8,775
Total Population	1,500,000	825,000		$12,375					$251,538

	Percent Incremental Purchases	Incremental Purchases	Cost per Incremental Purchase
Non Sauce Users	0%	-	NA
Sauce Users			
Brand Loyal	0%	-	NA
Brand Preferred Price Sensitive	25%	19,688	$3.53
Brand Preferred Not Price Sensitive	35%	4,200	$1.36
Brand Switchers Price Sensitive	70%	131,250	$1.19
Brand Switchers Not Price Sensitive	70%	17,500	$0.68
Brand Loyal to Competitor	100%	4,500	$1.95
Total		157,450	$1.60

Summary	
Cost	
Media	$12,375
Redemption	$193,000
Admin.	$46,163
Value	
Incremental Margin	$275,538
Cost	$251,538
Net Value	$24,000

FIG. 3D

Docket No.
6076-0002

Declaration and Power of Attorney For Patent Application

English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled
ELECTRONIC OFFER MANAGEMENT SYSTEM AND METHOD THEREOF

the specification of which

(check one)

☒ is attached hereto.

☐ was filed on _____ as United States Application No. or PCT International Application Number _____

and was amended on _____

(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)			Priority Not Claimed
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	☐
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	☐
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	☐

I hereby claim the benefit under 35 U.S.C. Section 119(e) of any United States provisional application(s) listed below:

(Application Serial No.)	(Filing Date)

I hereby claim the benefit under 35 U. S. C. Section 120 of any United States application(s), or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. Section 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, C. F. R., Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(list name and registration number)*

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Full name of sole or first inventor
Penny H. Baron

Sole or first inventor's signature — Date: 9/11/00
Penny H. Baron

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Third inventor's signature — Date: 9/14/00

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21342 North Grove Drive, Kildeer, Illinois 60047

Citizenship
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Full name of fourth inventor, if any
Timothy E. Halfman

Fourth inventor's signature — Date: 9/14/00

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12 Waterbury Lane, Schaumburg, Illinois 60193

Citizenship
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Post Office Address
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Full name of fifth inventor, if any
Mark S. Smith

Fifth inventor's signature — Date: 9/14/00

Residence
201 North Main Street, West Hartford, Ct. 06107

Citizenship
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Post Office Address
201 North Main Street, West Hartford, Ct. 06107

Full name of sixth inventor, if any

Sixth inventor's signature — Date

Residence

Citizenship

Post Office Address

APPENDIX 1

DTD: SOXOffer.dtd.

```
<?xml version="1.0" encoding="UTF-8"?>
<!--
Standard Offer Exchange:  Offer DTD
SOXOffer.dtd

Version 1.0  Draft
Date: 06/09/2000
ems, Copyright 2000
-->
<!--                                    -->
<!--      Revision History              -->
<!--                                    -->
<!--      SOX top element               -->
<!--                                    -->
<!ELEMENT SOX ((TargetServerList, Offer) | (Offer))>
<!ATTLIST SOX
OfferDistributorID CDATA #REQUIRED
SenderDocUID CDATA #REQUIRED
Version CDATA #REQUIRED
AckRequested (Normal | Terse | Verbose) #REQUIRED
SOXType (Offer) #REQUIRED
>
<!--                                                                    -->
<!--      Target Server List element:  Optional. Offer Agent Routing Information    -->
<!--                                                                    -->
<!ELEMENT TargetServerList (Server+)>
<!ATTLIST TargetServerList
ServerCount CDATA #REQUIRED
>
<!ELEMENT Server (ServerID, ServicePriority)>
<!ELEMENT ServerID (#PCDATA)>
<!ELEMENT ServicePriority (#PCDATA)>
<!--                                                  -->
<!--      Offer element: Required. Limit one Offer per document.    -->
<!--                                                  -->
<!ELEMENT Offer ((OfferMaintReq, OfferRouteReq) | (OfferMaintReq) | (OfferRouteReq))>
<!ATTLIST Offer
OfferID CDATA #REQUIRED
>
<!--                                                                    -->
<!--      Offer Maintenance Request element: Offer Properties, Offer Conditions,    -->
<!--      Offer Rewards not needed for Delete action, required for Add or Replace.  -->
<!--                                                                    -->
<!ELEMENT OfferMaintReq (OfferProperties, OfferConditions, OfferRewards)?>
<!ATTLIST OfferMaintReq
Action (Add | Replace | Delete) #REQUIRED
>
<!--                                                                    -->
<!--      Offer Properties element:                                     -->
<!--                                                                    -->
<!ELEMENT OfferProperties (MemberOffer, StaffAllowed, OfferType, OfferXactLimit, OfferCustLimit,
OfferStartDateTime, OfferEndDateTime, OfferDescription, OfferReportDescription, OfferSponsorSettlementID,
DeferredReward)>
<!ELEMENT MemberOffer (#PCDATA)>
<!ELEMENT StaffAllowed (#PCDATA)>
<!ELEMENT OfferType (#PCDATA)>
<!ELEMENT OfferXactLimit (#PCDATA)>
<!ELEMENT OfferCustLimit EMPTY>
<!ELEMENT OfferStartDateTime (Year, Month, Day, Hour, Minute)>
<!ELEMENT Year (#PCDATA)>
```

```
<!ELEMENT Month (#PCDATA)>
<!ELEMENT Day (#PCDATA)>
<!ELEMENT Hour (#PCDATA)>
<!ELEMENT Minute (#PCDATA)>
<!ELEMENT OfferEndDateTime (Year, Month, Day, Hour, Minute)>
<!ELEMENT OfferDescription (#PCDATA)>
<!ELEMENT OfferReportDescription (#PCDATA)>
<!ELEMENT OfferSponsorSettlementID (#PCDATA)>
<!ELEMENT DeferredReward (#PCDATA)>
<!--                                    -->
<!--    Offer Conditions element:       -->
<!--                                    -->
<!ELEMENT OfferConditions (ConditionSet+)>
<!ATTLIST OfferConditions
ConditionSetCount CDATA #REQUIRED
>
<!ELEMENT ConditionSet (ItemPurchase | DeptPurchase | TotalPurchase | TimeOfDay | DayOfWeek)>
<!ATTLIST ConditionSet
ConditionSetID (0 | 1 | 2 | 3 | 4 | 5 | 6 | 7) #REQUIRED
>
<!--                                        -->
<!--    Offer Condition: Item Purchase      -->
<!--                                        -->
<!ELEMENT ItemPurchase (ItemList, CondChkFlag, MeasureValue)>
<!ATTLIST ItemPurchase
Measure (Quantity | Weight | Amount) #REQUIRED
>
<!ELEMENT ItemList (Item+)>
<!ATTLIST ItemList
ItemCount CDATA #REQUIRED
>
<!ELEMENT Item (#PCDATA)>
<!ELEMENT CondChkFlag (#PCDATA)>
<!ELEMENT MeasureValue (#PCDATA)>
<!--                                            -->
<!--    Offer Condition: Department Purchase    -->
<!--                                            -->
<!ELEMENT DeptPurchase (DeptList, CondChkFlag, Amount)>
<!ELEMENT DeptList (Dept+)>
<!ATTLIST DeptList
DeptCount CDATA #REQUIRED
>
<!ELEMENT Dept (#PCDATA)>
<!ELEMENT Amount (#PCDATA)>
<!--                                        -->
<!--    Offer Condition: Total Purchase     -->
<!--                                        -->
<!ELEMENT TotalPurchase (CondChkFlag, Amount)>
<!ATTLIST TotalPurchase
Includes (All | Discountable) #REQUIRED
>
<!--                                        -->
<!--    Offer Condition: Time of Day        -->
<!--                                        -->
<!ELEMENT TimeOfDay (StartTime, EndTime)>
<!ELEMENT StartTime (Hour, Minute)>
<!ELEMENT EndTime (Hour, Minute)>
<!--                                        -->
<!--    Offer Conditions: Day of the Week   -->
<!--                                        -->
<!ELEMENT DayOfWeek (Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday)>
<!ELEMENT Sunday (#PCDATA)>
<!ELEMENT Monday (#PCDATA)>
<!ELEMENT Tuesday (#PCDATA)>
<!ELEMENT Wednesday (#PCDATA)>
<!ELEMENT Thursday (#PCDATA)>
```

```
<!ELEMENT Friday (#PCDATA)>
<!ELEMENT Saturday (#PCDATA)>
<!--                                    -->
<!--    Offer Rewards element:          -->
<!--                                    -->
<!ELEMENT OfferRewards (RewardSet+)>
<!ATTLIST OfferRewards
RewardSetCount CDATA #REQUIRED
>
<!ELEMENT RewardSet (ItemDiscount | DeptDiscount | TotalDiscount | FreeItem | ReplacementPriceMethod1)>
<!ATTLIST RewardSet
RewardSetID (0 | 1 | 2 | 3 | 4 | 5 | 6 | 7) #REQUIRED
>
<!--                                    -->
<!--    Offer Reward: Item Discount     -->
<!--                                    -->
<!ELEMENT ItemDiscount (ItemList, RewardLimit, BasisValue)>
<!ATTLIST ItemDiscount
Basis (Percent | Amount) #REQUIRED
>
<!ELEMENT RewardLimit (#PCDATA)>
<!ELEMENT BasisValue (#PCDATA)>
<!--                                        -->
<!--    Offer Reward: Department Discount   -->
<!--                                        -->
<!ELEMENT DeptDiscount (DeptList, RewardLimit, BasisValue)>
<!ATTLIST DeptDiscount
Basis (Percent | Amount) #REQUIRED
>
<!--                                    -->
<!--    Offer Reward: Total Discount    -->
<!--                                    -->
<!ELEMENT TotalDiscount (RewardLimit, BasisValue)>
<!ATTLIST TotalDiscount
Basis (Percent | Amount) #REQUIRED
>
<!--                                  -->
<!--    Offer Reward: Free Item       -->
<!--                                  -->
<!ELEMENT FreeItem (ItemList, RewardLimit)>
<!--                                                -->
<!--    Offer Reward: Replacement Price Method1     -->
<!--                                                -->
<!ELEMENT ReplacementPriceMethod1 (ItemList, DealPrice, DealQuantity, RewardLimit)>
<!ELEMENT DealPrice (#PCDATA)>
<!ELEMENT DealQuantity (#PCDATA)>
<!--                                                    -->
<!--    Offer Route Store Request element:  Optional.   -->
<!--                                                    -->
<!ELEMENT OfferRouteReq (StoreList+)>
<!--                                    -->
<!--    Store List element: Required.   -->
<!--                                    -->
<!ELEMENT StoreList (Store+)>
<!ATTLIST StoreList
Action (Add | Replace | Delete) #REQUIRED
StoreCount CDATA #REQUIRED
>
<!ELEMENT Store (StoreID, ServicePriority)>
<!ELEMENT StoreID (#PCDATA)>
```

DTD: SOXCustomerOffer.dtd.

```
<?xml version="1.0" encoding="UTF-8"?>
<!--
Standard Offer Exchange:  Customer Offer DTD
SOXCustomerOffer.dtd

Version 1.0 Draft
Date: 06/09/2000
ems, Copyright 2000
-->
<!--                                    -->
<!--      Revision History              -->
<!--                                    -->
<!--      SOX top element               -->
<!--                                    -->
<!ELEMENT SOX ((TargetServerList, CustomerOffer+) | (CustomerOffer+))>
<!ATTLIST SOX
OfferDistributorID CDATA #REQUIRED
SenderDocUID CDATA #REQUIRED
Version CDATA #REQUIRED
AckRequested (Normal | Terse | Verbose) #REQUIRED
CustomerOfferCount CDATA #REQUIRED
SOXType (CustomerOffer) #REQUIRED
>
<!--                                                                                -->
<!--      Target Server List element:  Optional. Customer Offer Agent Server  Routing Information    -->
<!--                                                                                -->
<!ELEMENT TargetServerList (Server+)>
<!ATTLIST TargetServerList
ServerCount CDATA #REQUIRED
>
<!ELEMENT Server (ServerID, ServicePriority)>
<!ELEMENT ServerID (#PCDATA)>
<!ELEMENT ServicePriority (#PCDATA)>
<!--                                                                    -->
<!--      Customer Offer element: Required. One or more Customer Offers per document.    -->
<!--                                                                    -->
<!ELEMENT CustomerOffer ((CustOfferMaintReq, CustOfferRouteReq) | (CustOfferMaintReq) |
(CustOfferRouteReq))>
<!ATTLIST CustomerOffer
OfferID CDATA #REQUIRED
MerchantID CDATA #REQUIRED
CustomerID CDATA #REQUIRED
>
<!ELEMENT CustOfferMaintReq ((CustOfferProperties, CustOfferRewards)? | (CustOfferProperties))>
<!ATTLIST CustOfferMaintReq
Action (Add | Replace | Delete | Activate) #REQUIRED
>
<!--                                    -->
<!--      Customer Offer Properties element:    -->
<!--                                    -->
<!ELEMENT CustOfferProperties ((OfferXactLimit, OfferCustLimit) | (OfferXactLimit))>
<!ELEMENT OfferXactLimit (#PCDATA)>
<!ELEMENT OfferCustLimit (#PCDATA)>
<!--                                   -->
<!--      Customer Offer Rewards element:  -->
<!--                                   -->
<!ELEMENT CustOfferRewards (RewardSet+)>
<!ATTLIST CustOfferRewards
RewardSetCount CDATA #REQUIRED
>
<!--                                                                    -->
<!--      Customer Offer Rewards Set element: Overrides existing Offer Reward Set.    -->
<!--                                                                    -->
```

```
<!ELEMENT RewardSet (ItemDiscount | DeptDiscount | TotalDiscount | ReplacementPriceMethod1)>
<!ATTLIST RewardSet
RewardSetID (0 | 1 | 2 | 3 | 4 | 5 | 6 | 7) #REQUIRED
>
<!--                                                    -->
<!--      Customer Offer Reward:  Item Discount -->
<!--                                                    -->
<!ELEMENT ItemDiscount (BasisValue)>
<!ATTLIST ItemDiscount
Basis (Percent | Amount) #REQUIRED
>
<!ELEMENT BasisValue (#PCDATA)>
<!--                                                        -->
<!--      Customer Offer Reward:  Department Discount -->
<!--                                                        -->
<!ELEMENT DeptDiscount (BasisValue)>
<!ATTLIST DeptDiscount
Basis (Percent | Amount) #REQUIRED
>
<!--                                                  -->
<!--      Customer Offer Reward: Total  Discount    -->
<!--                                                  -->
<!ELEMENT TotalDiscount (BasisValue)>
<!ATTLIST TotalDiscount
Basis (Percent | Amount) #REQUIRED
>
<!--                                                                -->
<!--      Customer Offer  Reward:  Replacement Price Method1 -->
<!--                                                                -->
<!ELEMENT ReplacementPriceMethod1 (DealPrice)>
<!ELEMENT DealPrice (#PCDATA)>
<!--                                                                        -->
<!--      Customer Offer Route Store Request  element: Optional.   -->
<!--                                                                        -->
<!ELEMENT CustOfferRouteReq (StoreList+)>
<!--                                          -->
<!--      Store List element:  Required.   -->
<!--                                          -->
<!ELEMENT StoreList (Store+)>
<!ATTLIST StoreList
Action (Add | Replace | Delete | Activate) #REQUIRED
StoreCount CDATA #REQUIRED
>
<!ELEMENT Store (StoreID, ServicePriority)>
<!ELEMENT StoreID (#PCDATA)>
```

DTD: SOXOfferAck.dtd.

```
<?xml version="1.0" encoding="UTF-8"?>
<!--
Standard Offer Exchange:  Offer Acknowledgement DTD
SOXOfferAck.dtd

Version 1.0 Draft
Date: 06/09/2000
ems, Copyright 2000
-->
<!--                                    -->
<!--      Revision History              -->
<!--                                    -->
<!--      SOX top element               -->
<!--                                    -->
<!ELEMENT SOX ((OfferAck, TargetServerList, Offer) | (OfferAck, Offer))>
<!ATTLIST SOX
Version CDATA #REQUIRED
SOXType (OfferAck) #REQUIRED
>
<!--                                                                    -->
<!--      Offer Acknowledgement elements:  For this Offer document.     -->
<!--                                                                    -->
<!ELEMENT OfferAck (DistributorID, AckRequested, SenderDocUID, SessionID, OfrRcptCtrlID, SenderID, Date,
Time, TimeZone)>
<!ELEMENT DistributorID (#PCDATA)>
<!ELEMENT AckRequested (#PCDATA)>
<!ELEMENT SenderDocUID (#PCDATA)>
<!ELEMENT SessionID (#PCDATA)>
<!ELEMENT OfrRcptCtrlID (#PCDATA)>
<!ELEMENT SenderID (#PCDATA)>
<!ELEMENT Date (Year, Month, Day)>
<!ELEMENT Year (#PCDATA)>
<!ELEMENT Month (#PCDATA)>
<!ELEMENT Day (#PCDATA)>
<!ELEMENT Time (Hour, Minute, Second)>
<!ELEMENT Hour (#PCDATA)>
<!ELEMENT Minute (#PCDATA)>
<!ELEMENT Second (#PCDATA)>
<!ELEMENT TimeZone (#PCDATA)>
<!--                                                                                -->
<!--      Status and Result elements:  For each Offer Agent Server Routing Request  -->
<!--                                                                                -->
<!ELEMENT TargetServerList (Server+)>
<!ATTLIST TargetServerList
ServerCount CDATA #REQUIRED
>
<!ELEMENT Server (ServerID, ServicePriority, Status, Result)>
<!ELEMENT ServerID (#PCDATA)>
<!ELEMENT ServicePriority (#PCDATA)>
<!ELEMENT Status (#PCDATA)>
<!ELEMENT Result (ResultCode, ResultSeverity, ResultDescription, ResultCondition)>
<!ELEMENT ResultCode (#PCDATA)>
<!ELEMENT ResultSeverity (#PCDATA)>
<!ELEMENT ResultDescription (#PCDATA)>
<!ELEMENT ResultCondition (#PCDATA)>
<!--                                -->
<!--      Offer element:            -->
<!--                                -->
<!ELEMENT Offer ((OfferMaintReq, OfferRouteReq) | (OfferMaintReq) | (OfferRouteReq))>
<!ATTLIST Offer
OfferID CDATA #REQUIRED
>
<!--                                          -->
```

```
<!--      Offer Maintenance Request  element    -->
<!--                                             -->
<!ELEMENT OfferMaintReq (OfferProperties, OfferConditions, OfferRewards)?>
<!ATTLIST OfferMaintReq
 Action (Add | Replace | Delete) #REQUIRED
>
<!--                                                          -->
<!--      Status and Result  elements:  For Offer Properties  -->
<!--                                                          -->
<!ELEMENT OfferProperties (Status, Result)>
<!--                                                                -->
<!--      Status and Result  elements:  For each Offer Conditions Set  -->
<!--                                                                -->
<!ELEMENT OfferConditions (ConditionSet+)>
<!ATTLIST OfferConditions
 ConditionSetCount CDATA #REQUIRED
>
<!ELEMENT ConditionSet (Status, Result)>
<!ATTLIST ConditionSet
 ConditionSetID (0 | 1 | 2 | 3 | 4 | 5 | 6 | 7) #REQUIRED
>
<!--                                                          -->
<!--      Status and Result  elements:  For each Offer Rewards Set  -->
<!--                                                          -->
<!ELEMENT OfferRewards (RewardSet+)>
<!ATTLIST OfferRewards
 RewardSetCount CDATA #REQUIRED
>
<!ELEMENT RewardSet (Status, Result)>
<!ATTLIST RewardSet
 RewardSetID (0 | 1 | 2 | 3 | 4 | 5 | 6 | 7) #REQUIRED
>
<!--                                                                -->
<!--      Status and Result  elements:  For each Offer Store Route Request  -->
<!--                                                                -->
<!ELEMENT OfferRouteReq (StoreList+)>
<!ELEMENT StoreList (Store+)>
<!ATTLIST StoreList
 Action (Add | Replace | Delete) #REQUIRED
 StoreCount CDATA #REQUIRED
>
<!ELEMENT Store (StoreID, ServicePriority, Status, Result)>
<!ELEMENT StoreID (#PCDATA)>
```

DTD: SOXCustomerOfferAck.dtd.

```
<?xml version="1.0" encoding="UTF-8"?>
<!--
Standard Offer Exchange:  Customer Offer Acknowledgement DTD
SOXCustomerOfferAck.dtd

Version 1.0 Draft
Date: 06/09/2000
ems, Copyright 2000
-->
<!--                                    -->
<!--      Revision History              -->
<!--                                    -->
<!--      SOX top element               -->
<!--                                    -->
<!ELEMENT SOX ((CustOfferAck, TargetServerList, CustomerOffer+) | (CustOfferAck, CustomerOffer+))>
<!ATTLIST SOX
Version CDATA #REQUIRED
CustomerOfferCount CDATA #REQUIRED
SOXType (CustomerOfferAck) #REQUIRED
>
<!--                                                                                -->
<!--      Customer Offer Acknowledgement elements:  For this Customer Offer document.   -->
<!--                                                                                -->
<!ELEMENT CustOfferAck (DistributorID, AckRequested, SenderDocUID, SessionID, OfrRcptCtrlID, SenderID,
Date, Time, TimeZone)>
<!ELEMENT DistributorID (#PCDATA)>
<!ELEMENT AckRequested (#PCDATA)>
<!ELEMENT SenderDocUID (#PCDATA)>
<!ELEMENT SessionID (#PCDATA)>
<!ELEMENT OfrRcptCtrlID (#PCDATA)>
<!ELEMENT SenderID (#PCDATA)>
<!ELEMENT Date (Year, Month, Day)>
<!ELEMENT Year (#PCDATA)>
<!ELEMENT Month (#PCDATA)>
<!ELEMENT Day (#PCDATA)>
<!ELEMENT Time (Hour, Minute, Second)>
<!ELEMENT Hour (#PCDATA)>
<!ELEMENT Minute (#PCDATA)>
<!ELEMENT Second (#PCDATA)>
<!ELEMENT TimeZone (#PCDATA)>
<!--                                                                                -->
<!--      Status and Result elements:  For each Customer Offer Agent Server Routing Request   -->
<!--                                                                                -->
<!ELEMENT TargetServerList (Server+)>
<!ATTLIST TargetServerList
ServerCount CDATA #REQUIRED
>
<!ELEMENT Server (ServerID, ServicePriority, Status, Result)>
<!ELEMENT ServerID (#PCDATA)>
<!ELEMENT ServicePriority (#PCDATA)>
<!ELEMENT Status (#PCDATA)>
<!ELEMENT Result (ResultCode, ResultSeverity, ResultDescription, ResultCondition)>
<!ELEMENT ResultCode (#PCDATA)>
<!ELEMENT ResultSeverity (#PCDATA)>
<!ELEMENT ResultDescription (#PCDATA)>
<!ELEMENT ResultCondition (#PCDATA)>
<!--                                    -->
<!--      Customer Offer element:       -->
<!--                                    -->
<!ELEMENT CustomerOffer ((CustOfferMaintReq, CustOfferRouteReq) | (CustOfferMaintReq) |
(CustOfferRouteReq))>
<!ATTLIST CustomerOffer
OfferID CDATA #REQUIRED
```

```
MerchantID CDATA #REQUIRED
CustomerID CDATA #REQUIRED
>
<!--                                                    -->
<!--      Customer Offer Maintenance Request element  -->
<!--                                                    -->
<!ELEMENT CustOfferMaintReq (CustOfferProperties, CustOfferRewards)?>
<!ATTLIST CustOfferMaintReq
Action (Add | Replace | Delete | Activate) #REQUIRED
>
<!--                                                                  -->
<!--      Status and Result  elements:  For Customer Offer Properties   -->
<!--                                                                  -->
<!ELEMENT CustOfferProperties (Status, Result)>
<!--                                                                        -->
<!--      Status and Result  elements:  For each Customer Offer Rewards Set  -->
<!--                                                                        -->
<!ELEMENT CustOfferRewards (RewardSet+)>
<!ATTLIST CustOfferRewards
RewardSetCount CDATA #REQUIRED
>
<!ELEMENT RewardSet (Status, Result)>
<!ATTLIST RewardSet
RewardSetID (0 | 1 | 2 | 3 | 4 | 5 | 6 | 7) #REQUIRED
>
<!--                                                                                  -->
<!--      Status and Result  elements:  For each Customer Offer Store Route Request   -->
<!--                                                                                  -->
<!ELEMENT CustOfferRouteReq (StoreList+)>
<!ELEMENT StoreList (Store+)>
<!ATTLIST StoreList
Action (Add | Replace | Delete | Activate) #REQUIRED
StoreCount CDATA #REQUIRED
>
<!ELEMENT Store (StoreID, ServicePriority, Status, Result)>
<!ELEMENT StoreID (#PCDATA)>
```

1.1 DTD: SOXErrorResponse.dtd.

```
<?xml version="1.0" encoding="UTF-8"?>
<!--
Standard Offer Exchange:  Error Response DTD
SOXErrorReponse.dtd

Version 1.0 Draft
Date: 06/09/2000
ems, Copyright 2000
-->
<!--                                    -->
<!--     Revision History               -->
<!--                                    -->
<!--     SOX top element                -->
<!--                                    -->
<!ELEMENT SOX (ErrorResponse)>
<!ATTLIST SOX
Version CDATA #REQUIRED
SOXType (ErrorResponse) #REQUIRED
>
<!--                                                  -->
<!--     Error Response element: For this document.   -->
<!--                                                  -->
<!ELEMENT ErrorResponse (SenderDocUID, ErrorCode, ErrorDescription, ErrorCondition, ErrorMessage,
ErrorSource, Date, Time, TimeZone, SessionID, OfrRcptCtrlID, SenderID, DTDErrorList)>
<!ELEMENT SenderDocUID (#PCDATA)>
<!ELEMENT ErrorCode (#PCDATA)>
<!ELEMENT ErrorDescription (#PCDATA)>
<!ELEMENT ErrorCondition (#PCDATA)>
<!ELEMENT ErrorMessage (#PCDATA)>
<!ELEMENT ErrorSource (#PCDATA)>
<!ELEMENT Date (Year, Month, Day)>
<!ELEMENT Year (#PCDATA)>
<!ELEMENT Month (#PCDATA)>
<!ELEMENT Day (#PCDATA)>
<!ELEMENT Time (Hour, Minute, Second)>
<!ELEMENT Hour (#PCDATA)>
<!ELEMENT Minute (#PCDATA)>
<!ELEMENT Second (#PCDATA)>
<!ELEMENT TimeZone (#PCDATA)>
<!ELEMENT SessionID (#PCDATA)>
<!ELEMENT OfrRcptCtrlID (#PCDATA)>
<!ELEMENT SenderID (#PCDATA)>
<!ELEMENT DTDErrorList (DTDError+)>
<!ATTLIST DTDErrorList
DTDErrorCount CDATA #REQUIRED
>
<!ELEMENT DTDError (PathName, ErrorCode, ErrorMessage)>
<!ELEMENT PathName (#PCDATA)>
```